Published by
Office of the University Registrar
University of California
One Shields Avenue
Davis, CA 95616-8692

Credits

Editorial and production coordination:
Randall Larson-Maynard,
Office of the University Registrar

Cover design:
Office of Public Communications

Photography:
Mediaworks

NOTICE: This General Catalog Supplement is not a contract nor an offer to enter into a contract. While every effort is made to ensure the accuracy of the information provided in this General Catalog Supplement, it must be understood that all courses, course descriptions, designations of instructors, curricular and degree requirements and other academic information described herein are subject to change or elimination at any time without notice or published amendment to this General Catalog Supplement.

In addition, The University of California reserves the right to make changes at any time, without prior notice, to other programs, policies, procedures and information, which are described in this catalog only as a convenience to its readers. Fees and all other charges are subject to change at any time without notice. Students should consult the appropriate academic or administrative department, school, college, graduate division or other service provider for currently accurate information on any matters described in this General Catalog Supplement; contact information is available at http://www.ucdavis.edu.
Version History

The Version History records each version and the changes made for that version. Click on the blue department name to go directly to the department.

Course Supplement—Version History

Version 1.0; 6.20.2014
- African American and African Studies; AAS 178, 192, 202
- Agricultural and Resource Economics; ARE 98, 106, 113, 119, 120S, 145, 147M, 252, 276
- American Studies; AMS 4, 255
- Animal Behavior (A Graduate Group); ANB 221
- Animal Biology (A Graduate Group); ABG 200A, 200B, 401
- Animal Science; ANS 103, 129, 149, 194H
- Anthropology; ANT 134, 137, 156A-B, 180, 201, 202, 225, 265, 269, 280
- Applied Biological Systems technology; ABT 233
- Arabic; ARB 299, 396
- Art History; AHI 98, 99, 150, 188H, 190C, 210, 211, 212, 213, 214, 215, 220
- Comparative Literature; COM 125
- Chemical and Materials Science; EMS 2
- Chinese; CHN 1, 10, 112, 120
- Classical Studies; CLS 101
- Clinical Research, CHL 208, 210Y, 246
- Communication; CMN 1, 102, 130, 140, 146, 170, 174, 245
- Comparative Literature; COM 125
- Drama; DRA 40A, 92, 122C, 180, 195, 245
- Hebrew; HEB 10
- Japanese; JPN 111, 112, 120, 130, 138, 157
- Law; LAW 285, 285A
- Management; MGT 120, 150, 160, 170, 180
- Mathematics; MAT 125B, 285B
- Medicine; Pediatrics, PED 615
- Medical Sciences, MED 111A, 248
- Molecular and Cellular Biology; MCB 110Y, 121, 213, 214, 215, 220
- Native American Studies; NAS 134
- Neurobiology, Physiology, and Behavior; NPB 142
- Neuroscience; NSC 250, 292
- Nursing; School of; NRS 242A-C, 243A-C, 250, 251A-D, 260, 270, 271A-C
- Philosophy; PHI 13, 130, 170
- Physical Education; PHE 29, 128A-B
- Physics; PHY 114
- Plant Biology; PB 116
- Pathology; PHT 101, 103, 193
- Plant Sciences; PLS 116
- Population Biology; PBO 206
- Psychology; PSY 290C, 290D, 132, 136, 157, 205G
- Russian; RUS 105
- Science and Technology Studies; STS 40A, 408
- Sociology; SOC 2, 154, 183, 185, 185Y
- Soil Science; SCS 212, 209, 216, 218
- Spanish; SPA 179A
- Statistics; STA 32, 101, 137
- University Writing Program; UWP 12, 104A, 110, 120, 253
- Veterinary Medicine: Population Health and Reproduction; PHR 251
- Veterinary Medicine: Preventive Veterinary Medicine; MMP 206
- Wildlife, Fish, and Conservation Biology; WFC 230

Version 1.1; 9.22.2014
- Agricultural and African Studies; AAS 178, 192, 202
- Agricultural and Resource Economics; ARE 98, 106, 113, 119, 120S, 145, 147M, 252, 276
- American Studies; AMS 4, 255
- Animal Behavior (A Graduate Group); ANB 221
- Animal Biology (A Graduate Group); ABG 200A, 200B, 401
- Animal Science; ANS 103, 129, 149, 194H
- Anthropology; ANT 134, 137, 156A-B, 180, 201, 202, 225, 265, 269, 280
- Applied Biological Systems technology; ABT 233
- Arabic; ARB 299, 396
- Art History; AHI 98, 99, 150, 188H, 190C, 210, 211, 212, 213, 214, 215, 220
- Comparative Literature; COM 125
- Chemical and Materials Science; EMS 2
- Chinese; CHN 1, 10, 112, 120
- Classical Studies; CLS 101
- Clinical Research, CHL 208, 210Y, 246
- Communication; CMN 1, 102, 130, 140, 146, 170, 174, 245
- Comparative Literature; COM 125
- Drama; DRA 40A, 92, 122C, 180, 195, 245
- Hebrew; HEB 10
- Japanese; JPN 111, 112, 120, 130, 138, 157
- Law; LAW 285, 285A
- Management; MGT 120, 150, 160, 170, 180
- Mathematics; MAT 125B, 285B
- Medicine; Pediatrics, PED 615
- Medical Sciences, MED 111A, 248
- Molecular and Cellular Biology; MCB 110Y, 121, 213, 214, 215, 220
- Native American Studies; NAS 134
- Neurobiology, Physiology, and Behavior; NPB 142
- Neuroscience; NSC 250, 292
- Nursing; School of; NRS 242A-C, 243A-C, 250, 251A-D, 260, 270, 271A-C
- Philosophy; PHI 13, 130, 170
- Physical Education; PHE 29, 128A-B
- Physics; PHY 114
- Plant Biology; PB 116
- Pathology; PHT 101, 103, 193
- Plant Sciences; PLS 116
- Population Biology; PBO 206
- Psychology; PSY 290C, 290D, 132, 136, 157, 205G
- Russian; RUS 105
- Science and Technology Studies; STS 40A, 408
- Sociology; SOC 2, 154, 183, 185, 185Y
- Soil Science; SCS 212, 209, 216, 218
- Spanish; SPA 179A
- Statistics; STA 32, 101, 137
- University Writing Program; UWP 12, 104A, 110, 120, 253
- Veterinary Medicine: Population Health and Reproduction; PHR 251
- Veterinary Medicine: Preventive Veterinary Medicine; MMP 206
- Wildlife, Fish, and Conservation Biology; WFC 230
Policies and Requirements Addendum—Version History

Version 1.0: 6.20.2014

- Engineering: Biochemical
- Earth and Planetary Sciences
- Mathematics


- Arab Studies
- Art History
- Asian American Studies
- Cinema and Technocultural Studies
- College Board Advanced Placement (AP) Examination Credit Chart
- Communication
- Design
- Earth and Planetary Sciences
- East Asian Languages and Cultures
- Engineering: Chemical Engineering and Materials Science
- Engineering: Civil and Environmental General Education Options/Courses
- Global Disease Biology
- Food Science
- Incomplete Grades
- India & South Asia Studies
- Integrative Pathobiology [A Graduate Group]
- International Relations
- Iran & Persian Studies
- Italian
- Minor Programs Offered by UC Davis
- Managerial Economics
- Mathematics
- Philosophy
- Repeating Courses
- Science and Technology Studies
- Theatre and Dance

Version 1.2: 5.4.2015

- Agricultural Systems and Environment Biochemistry and Molecular Biology Biotechnology
- Cinema and Technocultural Studies
- Cognitive Science
- Community and Regional Development
- East Asian Languages and Cultures
- Engineering: Computer Science
- Environmental Policy Analysis and Planning
- Environmental Science and Management
- Human Development
- International Agricultural Development
- Managerial Economics
- Molecular and Cellular Biology
- Wildlife, Fish, and Conservation Biology

Version 1.8: 1.2.2016

- American Studies
- Art History
- Art History
- Biotechnology
- Cinema and Technocultural Studies
- Cognitive Science
- Community and Regional Development
- East Asian Languages and Cultures
- Engineering: Computer Science
- Environmental Policy Analysis and Planning
- Environmental Science and Management
- Human Development
- International Agricultural Development
- Managerial Economics
- Molecular and Cellular Biology
- Wildlife, Fish, and Conservation Biology

General Catalog Update, Version 1.3: 6.18.2015

- Degrees Offered by UC Davis
- Undergraduate Education

Anthropology
- Biological Sciences
- Chemistry
- Classics
- Communication
- East Asian Languages and Cultures
- Engineering: Chemical Engineering and Materials Science
- English
- Gender, Sexuality and Women's Studies
- Global and International Studies
- International Relations
- Music
- Philosophy
- Political Science

Version 1.9: 9.21.2015

- Engineering: Biochemical
- Engineering: Chemical Engineering and Materials Science
- Engineering: Civil and Environmental Engineering: Computer Science
- Engineering: Electrical and Computer Engineering
- Engineering: Mechanical and Aerospace Engineering
# Table of Contents

The 2014-2016 UC Davis General Catalog Supplement contains updated information regarding requirements and courses for the 2012-2014 academic years. Use this document in conjunction with the 2014-2016 UC Davis General Catalog. If a department is not listed in this document, there are no changes to that department’s programs.

**Version History** .......................... 1  
**Introduction** ............................. 7  
**Course Supplement** ....................... 7  
  - African American and African Studies .......................... 7  
  - Agricultural and Resource Economics .......................... 7  
  - Agricultural Education ........................................... 9  
  - American Studies ............................................... 9  
  - Animal Behavior (A Graduate Group) .......................... 11  
  - Animal Biology (A Graduate Group) .......................... 11  
  - Animal Genetics .................................................. 11  
  - Animal Science .................................................. 12  
  - Anthropology ..................................................... 13  
  - Applied Biological Systems Technology ......................... 18  
  - Arabic .................................................................. 18  
  - Art History ......................................................... 19  
  - Art Studio ......................................................... 22  
  - Asian American Studies ........................................... 24  
  - Atmospheric Science .............................................. 24  
  - Avian Science ...................................................... 25  
  - Biochemistry, Molecular, Cellular and Developmental Biology .............................................. 26  
  - Biological Sciences ............................................... 27  
  - Biophotonics ......................................................... 28  
  - Biophysics ............................................................. 28  
  - Biostatistics .......................................................... 28  
  - Biotechnology ....................................................... 28  
  - Cell and Developmental Biology .................................. 28  
  - Cell Biology and Human Anatomy ............................... 29  
  - Chemistry ............................................................ 29  
  - Chicana/o Studies ................................................... 30  
  - Chinese .................................................................. 31  
  - Cinema & Technocultural Studies ................................. 33  
  - Classics .................................................................. 34  
  - Clinical Research .................................................... 36  
  - Communication ....................................................... 36  
  - Community and Regional Development ....................... 38  
  - Comparative Literature ............................................ 39  
  - Critical Theory ....................................................... 43  
  - Cultural Studies ..................................................... 44  
  - Davis Honors Challenge ........................................... 44  
  - Design ................................................................. 44  
  - Dramatic Art .......................................................... 45  
  - East Asian Studies .................................................. 46  
  - Ecology .................................................................. 47  
  - Economics ............................................................. 48  
  - Education .............................................................. 50  
  - Engineering ............................................................ 54  
    - Engineering: Aerospace Science and Engineering .................. 54  
    - Engineering: Applied Science—Davis .......................... 54  
    - Engineering: Biological Systems ............................... 55  
    - Engineering: Biomedical ........................................... 55  
    - Engineering: Chemical ............................................ 58  
    - Engineering: Chemical and Materials Science ................. 60  
    - Engineering: Civil and Environmental ........................ 61  
    - Engineering: Computer Science ................................ 62  
    - Engineering: Electrical and Computer ......................... 66  
    - Engineering: Materials Science and Engineering ............. 69  
    - Engineering: Mechanical ......................................... 70  
    - Engineering: Mechanical and Aerospace ....................... 70  
  - English ............................................................... 70  
  - Entomology ............................................................ 71  
  - Environmental Horticulture ....................................... 72  
  - Environmental Science and Management ....................... 72  
  - Environmental Science and Policy ................................ 72  
  - Environmental Toxicology ........................................ 72  
  - Epidemiology ........................................................ 73  
  - Evolution and Ecology ............................................. 73  
  - Exercise Biology ..................................................... 74  
  - Fiber and Polymer Science ......................................... 74  
  - Food Science and Technology ..................................... 75  
  - Forensic Science .................................................... 75  
  - French .................................................................. 75  
  - Genetics (A Graduate Group) ...................................... 77  
  - Geography (A Graduate Group) .................................... 78  
  - Geology ............................................................... 78  
  - German ............................................................... 79  
  - Global Disease Biology ............................................ 81  
  - Greek ................................................................. 81  
  - Health Informatics ................................................... 82  
  - Hebrew ............................................................... 82  
  - Hindi .................................................................. 82  
  - History ............................................................... 82  
  - Human Development ................................................ 86  
  - Human Rights ....................................................... 87  
  - Humanities ........................................................... 87  
  - Hydrology ............................................................ 87  
  - Hydrologic Science (A Graduate Group) ......................... 87  
  - Immunology .......................................................... 87  
  - Integrated Studies ................................................... 87  
  - International Agricultural Development ......................... 88  
    - International Commercial Law (A Graduate Group) .......... 88  
  - International Relations ............................................. 89  
  - Italian ............................................................... 89  
  - Japanese .............................................................. 90  
  - Landscape Architecture ............................................ 91  
  - Latin .................................................................. 92  
  - Law ................................................................. 93  
  - Linguistics ............................................................. 97  
  - Management ......................................................... 97  
  - Mathematical and Physical Sciences ............................. 102  
  - Mathematics ........................................................ 102  
  - Medical Sciences ................................................... 104  
  - Medicine: Anesthesiology and Pain ............................... 106  
    - Medicine: Biological Chemistry ................................. 106  
    - Medicine: Cardiology ............................................. 106  
    - Medicine: Dermatology .......................................... 107  
    - Medicine: Emergency Medicine ............................... 107  
    - Medicine: Family and Community ............................ 107  
    - Medicine: General Medicine .................................... 107  
    - Medicine: Human Physiology ................................... 108  
    - Medicine: Internal Medicine .................................... 108  
      - Medicine: Internal Medicine—General Medicine ........ 109  
      - Medicine: Internal Medicine—Hematology and Oncology ..... 109  
      - Medicine: Internal Medicine—Nephrology ................... 109  
      - Medicine: Internal Medicine—Pulmonary Medicine .......... 109  
      - Medicine: Medical Microbiology .............................. 110  
      - Medicine: Neurology ........................................... 110  
    - Medicine: Obstetrics and Gynecology .......................... 110  
    - Medicine: Orthopaedic Surgery ................................ 110  
    - Medicine: Pathology ............................................. 111  
    - Medicine: Pediatrics ............................................. 111  
    - Medicine: Pharmacology and Toxicology ...................... 112  
    - Medicine: Physical Medicine and Rehabilitation .......... 112  
    - Medicine: Psychiatry ............................................. 112  
    - Medicine: Public Health Sciences ............................. 113  
    - Medicine: Radiation Oncology ................................ 114  
    - Medicine: Radiology—Nuclear Medicine ....................... 114  
    - Medicine: Surgery .............................................. 114  
    - Medicine: Urology ............................................... 115  
    - Microbiology ...................................................... 115  
    - Middle East/South Asia Studies ................................. 115  
    - Military Science .................................................. 116  
    - Molecular and Cellular Biology ................................. 116  
    - Molecular, Cellular, and Integrative Physiology ............. 116  
    - Music .............................................................. 116  
    - Native American Studies ........................................ 120  
    - Nematology ....................................................... 121  
    - Neurobiology, Physiology, and Behavior ...................... 122  
    - Neuroscience ..................................................... 122  
    - Nursing, School of .............................................. 123  
    - Nutrition ........................................................... 126  
    - Nutritional Biology (A Graduate Group) ....................... 127  
    - Pharmacology and Toxicology .................................. 127  
    - Philosophy ........................................................ 127  
    - Physical Education .............................................. 128  
    - Physicians Assistant Studies .................................... 128  
    - Physics ............................................................ 129  
    - Plant Biology ...................................................... 130  
    - Plant Biology (A Graduate Group) ............................. 130  
    - Plant Pathology ................................................... 130  
    - Plant Sciences .................................................... 131  
    - Political Science .................................................. 132  
    - Population Biology ............................................. 136  
    - Portuguese ........................................................ 136  
    - Professional Accountancy ....................................... 136  
    - Psychology ...................................................... 137  
    - Religious Studies ................................................ 139  
    - Russian ............................................................ 140  
    - Science and Society .............................................. 140  
    - Science and Technology Studies ................................. 141  
    - Sociology .......................................................... 141  
    - Soil Science ........................................................ 143  
    - Spanish ............................................................. 144  
    - Statistics ........................................................... 145  
    - Study of Religion (A Graduate Group) ........................ 147  
    - Sustainable Agriculture and Food Systems .................... 147  
    - Technocultural Studies ......................................... 147  
    - Textiles and Clothing ............................................ 147  
    - Transportation Technology and Policy ......................... 148  
    - UC Davis Washington Center .................................... 148  
    - University Writing Program ..................................... 148  
    - Veterinary Medicine: Anatomy, Physiology and Cell Biology 148  
    - Veterinary Medicine: Molecular Biosciences ................ 149
Introduction

The 2014-2016 General Catalog Course Supplement and Policies & Requirements Addendum addresses important changes to the UC Davis 2014-2016 General Catalog. Changes are contained in two sections; the Course Supplement and Policies & Requirements Addendum.

Course Supplement

Changes, cancellations, or the addition of new courses, are contained in the Course Supplement, below.

Policies and Requirements Addendum

Revised or the addition of new undergraduate/graduate/professional degree programs and requirements, and revised or the addition of new General Catalog policies or procedures are contained in the Policies & Requirements Addendum.

Course Supplement

African American and African Studies

New and changed courses in African American and African (AAS)

Lower Division

15. Introduction to African American Humanities (4)

Lecture—3 hours; discussion—1 hour. Class size limited to 165 students. Introduction to the humanist tradition developed by writers, philosophers, and artists of African descent in the West. Attention also given to African sources, as well as European, Caribbean, Latin-American, and North American variations on this tradition. GE credit: Wrt | ACGH, AH, DD. — W. (W.) Harrison, Osumare (change in existing course—eff. winter 15)

Upper Division

107C. African Descent Communities and Culture in Asia (4)

Lecture/discussion—4 hours. Study of the origin and development of African Descent communities and cultures in Asia. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC. — W. (W.) Ng’weno (change in existing course—eff. winter 15)

African American and African Studies Program.

Agricultural and Resource Economics (ARE)

New and changed courses in Agricultural and Resource Economics (ARE)

Lower Division

98. Directed Group Study (1-5)

Prerequisite: consent of instructor. Restricted to lower division students. Offered in alternate years. Offered irregularly. GE credit: SS. (change in existing course—eff. fall 14)

Upper Division

100A. Intermediate Microeconomics: Theory of Production and Consumption (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Economics 1A, 1B; Mathematics 16C. Pass One open to Managerial Economics majors, Agricultural and Resource Economics, International Agricultural
Development, viticulture and enology, and transportation technology and policy. Graduate majors: Pass Two open to majors in the College of Agricultural and Environmental Sciences. Theory of individual consumer and market demand; theory of production and supply of agricultural products, with particular reference to the individual firm; price determination, and employment of resources under pure competition. Not open for credit to students who have completed Economics 101. GE credit: SocSci | QuL, SS, —F, W, Su, (F, W, Su, S) (change in existing course—fall 15)

100B. Intermediate Microeconomics: Imperfect Competition, Markets and Welfare Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100A. Pass One open to Managerial Economics majors; Pass Two open to majors in the College of Agricultural and Environmental Sciences. Price determination, and employment of resources under conditions of monopoly, oligopoly, and monopolistic competition. GE credit: SocSci | QuL, SS, —F, W, Su, (F, W, Su, S) (change in existing course—fall 15)

106. Econometric Theory and Applications (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100A, Statistics 103. Pass One open to Managerial Economics majors; Pass Two open to majors in the College of Agricultural and Environmental Sciences. Statistical methods for analyzing data to solve problems in managerial economics. Topics include the linear regression model, methods to resolve data problems, and the economic interpretation of results. Not open for credit to students who have enrolled in or completed Economics 140. GE credit: SocSci | QuL, SS, —F, W, Su, (F, W, Su, S) (change in existing course—fall 14)

107. Econometrics for Business Decisions (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 106. Pass One open to Managerial Economics majors; Pass Two open to majors in the College of Agricultural and Environmental Sciences. Covers state-of-the-art econometric and statistical methods for causal and predictive modeling with applications to finance and marketing. GE credit: SocSci | SS —F, W, Su, (F, W, Su, S) (new course—fall 15)

113. Fundamentals of Marketing Management (4)
Lecture—4 hours. Prerequisite: Economics 1A; for non-majors only. Nature of product marketing by the business firm. Customer-product relationships, pricing and demand development and marketing strategy; promotion and advertising; product life cycles; the distribution system; manufacturing, wholesaling, retailing. Government regulation and restraints. Not open for credit to students who have completed course 136. Offered irregularly. GE credit: SocSci | SS (change in existing course—fall 14)

119. Intermediate Managerial Accounting (4)
Lecture—4 hours; extensive problem solving—8 hours. Prerequisite: Management 11A, 11B. Pass One open to majors in the College of Agricultural and Environmental Sciences. Use of accounting information by managers in decision making, planning, directing and controlling operations. Focuses on managerial cost accounting theory and practice. Covers costing systems, budgeting, and financial statement analysis. GE credit: SocSci | SS —F, (F) (change in existing course—fall 14)

120. Agricultural Policy (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100A. Analytical treatment of historical and current economic problems and governmental policies influencing agriculture. Uses of economic theory to develop historical and conceptual understanding of the economics of agriculture; how public policy influences the nature and performance of American agriculture. GE credit: SocSci | ACGH, SS, —F, (S) (change in existing course—winter 16)

120S. Agricultural Policy (4)
Lecture—4 hours. Prerequisite: course 100A or consent of instructor. Analytical treatment of historical and current economic problems and governmental policies influencing agriculture. Uses of economic theory to develop historical and conceptual understanding of the economics of agriculture; how public policy influences the nature and performance of agriculture. Taught in Australia under the supervision of a UC Davis faculty member. Not open for credit to students who have completed course 120S. Offered irregularly. GE credit: SocSci | SS, WC (change in existing course—fall 14)

130. Agricultural Markets (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 106. Pass One open to majors in the College of Agricultural and Environmental Sciences; Pass Two open to all majors. Nature, function, organizational structure, and operation of agricultural markets; prices, costs, and margins; market information, regulation, and controls; cooperative marketing. GE credit: SocSci | SS, —W, (W) (change in existing course—fall 15)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 100B. Pass One open to majors in the College of Agricultural and Environmental Sciences. Basic nature and scope of international trade in agricultural commodities, agricultural inputs, and natural resources. Market dimensions and policy institutions. Case studies to illustrate import and export problems associated with different regions and commodities. GE credit: SocSci | SS —W, (W) (change in existing course—fall 15)

140. Farm Management (4)
Lecture—4 hours. Prerequisite: Economics 1A. Pass One open to Managerial Economics majors. Farm organization and resources; economic and technological principles in decision making; analytical techniques and managerial control; problems in organizing and managing the farm business. GE credit: SocSci | SS —W, (W) (change in existing course—fall 15)

143. Investments (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Pass One open to majors in the College of Agricultural and Environmental Sciences; Pass Two open to all majors. Survey of investment institutions, sources of investment information, and portfolio theory. Analysis of the stock, bond and real estate markets from the perspective of the investor. GE credit: SocSci | SS —W, Su, (W, Su) (change in existing course—fall 15)

146. Business, Government Regulation, and Society (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100B. Pass One open to majors in the College of Agricultural and Environmental Sciences. Variety, nature and impact of government regulation: anti-trust laws and economic and social regulation. Nature of the legislative process, promulgation of regulations, and their impact, especially as analyzed by economists. GE credit: SocSci | ACGH, SS —F, (F) (change in existing course—fall 15)

147. Resource and Environmental Policy Analysis (3)
Lecture—3 hours. Prerequisite: Economics 1A. Open to non-majors only. Natural resource use problems with emphasis on past and current policies and institutions affecting resource use; determinants, principles, and patterns of natural resource use; property rights; conservation; private and public resource use problems; and public issues. Students who have had or are taking course 100A, Economics 100, or the equivalent, may receive only 2 units of credit; so must enroll in course 147M instead. GE credit: SocSci | SS —W, (W) (change in existing course—fall 14)

147M. Resource and Environmental Policy Analysis (2)
Lecture—3 hours. Prerequisite: Economics 1A. Open to non-majors only. Natural resource use problems with emphasis on past and current policies and institutions affecting resource use; determinants, principles, and patterns of natural resource use; property rights; conservation; private and public resource use problems; and public issues. Students who have had or are taking course 100A, Economics 100, or the equivalent, must enroll in this course for 2 units rather than course 147. GE credit: SocSci | SS —W, (W) (change in existing course—fall 14)

150. Agricultural Labor (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100A. Pass One open to majors in the College of Agricultural and Environmental Sciences. Analysis of labor markets with focus on U.S. and world agriculture. Labor supply, demand, market equilibrium; why farm labor markets are different; global trends in farm labor; U.S. farm labor history; unions and collective bargaining; immigration policy. GE credit: SocSci, Div, Writ | SS —S, (S) (change in existing course—fall 15)

156. Introduction to Mathematical Economics (4)
Lecture—4 hours. Prerequisite: courses 100B and 155. Pass One open to majors in the College of Agricultural and Environmental Sciences; Pass Two open to all majors. Linear programming for econometric, necessary and sufficient conditions in static optimization problems; implicit function theorem; economic methodology and mathematics; comparative statics; envelopes and theorems. Linear programming techniques to production and consumer models. Offered irregularly. GE credit: SocSci | QuL, SS —S, (Su) (change in existing course—winter 16)

157. Analysis for Operations and Production Management (4)
Lecture—4 hours. Prerequisite: course 155. Pass One open to majors in the College of Agricultural and Environmental Sciences; Pass Two open to all majors. Application of economic theory and quantitative methods to analyze operations and production management problems including process strategies, quality management, location and plant layout, and inventory management. GE credit: SocSci | SS —F, W, (F, W) (change in existing course—fall 15)

165. Emerging Economies and Globalization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 100A, 115A, 115B; completion of course 106 and Economics 162 strongly recommended. Pass One open to Managerial Economics and graduate majors. Economic drivers and policy challenges in the major emerging markets, with an emphasis on the effects of rising incomes, population growth, urbanization, and relative wages on world markets and natural resources. GE credit: SocSci | SS —F, (F) (change in existing course—fall 15)

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum
AGCH—American Cultures; DD—Diverse Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience
Quarter Offered: F=Fall, W=Winter, S=Spring, J=Summer; 2015-2016 offering in parentheses

194HA. Special Study for Honors Students (4)
Independent study—3 hours; seminar—1 hour. Prerequisite: minimum GPA of 3.500; course 100B, courses 106 and 155 (may be taken concurrently); major in Agricultural and Managerial Economics or Managerial Economics; senior standing; consent of instructor. A program of research culminating in the writing of a senior honors thesis under the direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SocSci | QL, SS, WE. (change in existing course—eff. summer 15)

194HB. Special Study for Honors Students (4)
Independent study—3 hours; seminar—1 hour. Prerequisite: minimum GPA of 3.500; course 100B; courses 106 and 155 (may be taken concurrently); major in Agricultural and Managerial Economics or Managerial Economics; senior standing. A program of research culminating in the writing of a senior honors thesis under the direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SocSci | QL, SS, WE. (change in existing course—eff. summer 15)

Graduate
222. International Agricultural Trade and Policy (4)
Lecture—4 hours. Prerequisite: course 204A or 204A; Economics 160A or the equivalent. Analysis of causes and interdependence through world agricultural markets. Partial equilibrium analysis is used to study the impacts of national intervention on world markets, national policy choice in an open economy and multinational policy issues. —F. (F.)

223. Economics of Agriculture (4)
Lecture—4 hours. Prerequisite: courses 204A and 256A or equivalent completed or concurrent required. Open to MS students in Agricultural and Resource Economics, Ph.D. students in Agricultural and Resource Economics and qualified students from other UC Davis graduate groups/programs. Analytic treatment of the historical development and contemporary role of agriculture in the global, U.S. and California economies. Uses economic reasoning and evidence to develop a historical and conceptual understanding of the economics of agriculture, agricultural issues, and related government policies. —F. (F.)

252. Optimization with Economic Applications (4)
Lecture—3 hours; discussion—1 hour. Applied linear programming methods emphasizing uses for business decisions: production, diet, blending, network and related problems. —W. (W.)

253. Optimization Techniques with Economic Applications (4)
(canceled course—eff. fall 14)

256A. Applied Econometrics I (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 106 or Economics 140; or consent of instructor. First of two courses in the Masters-level econometrics sequence. The linear regression model and generalizations are applied to topics in agricultural and resource economics. Tools for empirical research for problems requiring more sophisticated tools than standard regression models are emphasized. Offered in alternate years. —F. (F.)

256B. Applied Econometrics II (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 256A or consent of instructor. Second of two courses in the Masters-level econometrics sequence.
6. Food in American Culture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of Subject A requirement. Food as a cultural system and its relation to religion, politics, arts, science, technology, and material culture; business themes such as economy, invention, and competition in American cookbooks, fiction, advice literature, film, and television; cultures of the workplace, multinational business. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—F. (F)
(change in existing course—eff. spring 15)

75. Food in American Culture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of Subject A requirement. Food as a cultural system and its relation to religion, politics, arts, science, technology, and material culture; business themes such as economy, invention, and competition in American cookbooks, fiction, advice literature, film, and television; cultures of the workplace, multinational business. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—F. (F)
(change in existing course—eff. spring 15)

The food industry and business. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—W. (W)
(change in existing course—eff. spring 15)

Upper Division
101A. Special Topics: Popular Culture Studies (4)
Seminar—3 hours. Intensive reading, writing, and special projects. Interdisciplinary group study of special topics in American Culture Studies, designed for non-majors as well as majors. May be repeated for credit in different subject area only.
(change in existing course—eff. spring 15)

101B. Special Topics: Women's Studies (4)
Seminar—3 hours. Intensive reading, writing, and special projects. Interdisciplinary group study of special topics in American Culture Studies, designed for non-majors as well as majors. May be repeated for credit in different subject area only.
(change in existing course—eff. spring 15)

101C. Special Topics: Material Aspects of American Culture (4)
Seminar—3 hours. Intensive reading, writing, and special projects. Interdisciplinary group study of special topics in American Culture Studies, designed for non-majors as well as majors. May be repeated for credit in different subject area only.
(change in existing course—eff. spring 15)

21. Objects and Everyday Life (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of subject A requirement. Material culture (objects and artifacts ranging from everyday objects like toys and furnishings to buildings and constructed landscapes) as evidence for understanding the history of everyday life (venerable) lives (gender, class, ethnicity, region, age, and other factors); collecting and displaying material. Offered in alternate years. GE credit: ArtHum, Div, Wrt | ACGH, AH, DD, WE.—S. Kaplan
(change in existing course—eff. spring 15)

25. United States as a Business Culture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of subject A requirement. Business as a cultural system and its relation to religion, politics, arts, science, technology, and material culture; business themes such as economy, invention, and competition in American cookbooks, fiction, advice literature, film, and television; cultures of the workplace, multinational business. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—F. (F)
(change in existing course—eff. spring 15)

30. Images of America and Americans in Popular Culture (4)
Lecture—3 hours; discussion—1 hour. Investigation of verbal and visual discourses about American identity in various popular culture products, including film, television, radio, music, fiction, art, advertising, and commercial experiences; discourses about the United States in the popular culture of other societies. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—F. (F) Kaplan, Smooldin
(change in existing course—eff. spring 15)

120. American Folklore and Folklife (4)
Lecture—3 hours; fieldwork—1 hour. Theory and method of the study of American folk traditions, including oral lore, custom, music, and material folk culture; the uses and meanings of those traditions in various folk communities, including families, ethnic institutions, voluntary organizations, and occupational groups. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.
(change in existing course—eff. spring 15)

125. Corporate Cultures (4)
Lecture—2 hours; discussion—1 hour; fieldwork—1 hour. Prerequisite: consent of instructor. Exploration of the small group cultures of American corporate workplaces, including the role of environment, stories, jokes, rituals, ceremonies, personal style, and play. The effects of cultural diversity upon corporate cultures, both from within and in contact with foreign corporations.
(change in existing course—eff. spring 16)

130. American Popular Culture (4)
Lecture/discussion—3 hours; fieldwork—1 hour. American popular cultural expression and experience as a cultural system, and the relationship between this system and elite and folk cultures. Exploration of theories and methods for discovering and interpreting patterns of meaning in American popular culture. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.
(change in existing course—eff. spring 15)

139. Feminist Cultural Studies (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women's Studies or American Studies. The histories, theories, and practices of feminist traditions within cultural studies. (Same course as Women's Studies 139.) GE credit: SocSci, Div, Wrt | ACGH, AH, DD, SS, VL, WE.
(change in existing course—eff. spring 15)

151. American Landscapes and Places (4)
Lecture—2 hours; discussion—1 hour; fieldwork—3 hours. Comparative study of several American cultural landscapes inhabiting a region, including their relationship to a shared biological, physical, and social environment, their intercultural relations, and their relationships to the dominant American popular and elite culture and folk traditions. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.
(change in existing course—eff. spring 15)

152. The Lives of Children in America (4)
Lecture—2 hours; discussion—2 hours. Experience of childhood and adolescence in American culture, as understood through historical, literary, artistic, and social scientific approaches. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.—Smooldin
(change in existing course—eff. spring 15)

153. The Individual and Community in America (4)
Lecture—2 hours; discussion—2 hours. Interdisciplinary examination of past and present tensions between the individual and the community in American experience, as those tensions are expressed in such cultural systems as folklore, public ritual, popular entertainment, literature, fine arts, architecture, and social thought. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE.
(change in existing course—eff. spring 15)
154. The Lives of Men in America (4)
Lecture—2 hours; discussion—2 hours. Interdisciplinary examination of the lives of boys and men in America, toward understanding cultural definitions of masculinity, the ways individuals have accepted or resisted these definitions, and the broader consequences of the struggle over the social construction of gender. Offered irregularly. GE credit: ArthHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE. (change in existing course—eff. spring 15)

155. Eating in America (4)
Lecture—3 hours; fieldwork. Prerequisite: course 1. Interdisciplinary examination of the culture of food in America. Exploration of eating as a richly symbolic event integral to how Americans express and negotiate values, politics and identity. Offered irregularly. GE credit: ArthHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE. (change in existing course—eff. spring 15)

156. Race, Culture and Society in the United States (4)
Lecture—2 hours; discussion—2 hours. Interdisciplinary examination of the significance of race in the making of America; how race shapes culture, identities and social processes in the United States; the interweaving of race with gender, class and nationhood in self and community. Offered irregularly. GE credit: ArthHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE. (change in existing course—eff. spring 15)

157. Animals in American Culture (4)
Lecture—3 hours; discussion—1 hour. Animals as symbols in American thought, as found in folklore, popular culture, literature, and art; customs and stories around human-animal interactions, including hunting, religion, foodways, pets, zoos, circuses, rodeos; same time and scientific research on animals. Offered in alternate years. GE credit: ArthHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE. (change in existing course—eff. spring 16)

158. Technology and the Modern American Body (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Technocultural Studies 1 and either course 1A or 5. The history and analysis of the relationships between human bodies and technologies in modern society. Dominant and eccentric examples of how humans have used body technologies to influence another and reveal underlying cultural assumptions. (Some course as Technocultural Studies 15B.) GE credit: GE credit: ArthHum | ACGH, AH, WE. (change in existing course—eff. spring 15)

190A. Senior Thesis Research Seminar (4)
Seminar—2 hours; extensive writing. Research and prospectus writing for senior thesis. —F, S. [F] (change in existing course—eff. spring 16)

Graduate
255. Food in American Culture (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Graduate standing or advanced undergraduate with consent of instructor. Interdisciplinary theories and methods for the study of food in American culture; food studies in relation to issues of identity (age, gender, ethnicity, religion, region, etc.); social relations, systems of production, and cultures of consumption. Offered irregularly.—W (W) (change in existing course—eff. spring 15)

Animal Behavior (A Graduate Group)

Animal Behavior (A Graduate Group)
New and changed courses in Animal Behavior (ANB)
Graduate
221. Animal Behavior, Ecology and Evolution (3)
Lecture—3 hours. Prerequisite: Neurobiology, Physiology, and Behavior 102, Evolution and Ecology 100, 101 or the equivalent, graduate standing, and consent of instructor. Interface between animal behavior, ecology and evolution. New developments in behavioral ecology and development and testing of hypotheses in this discipline. (Same course as Animal Behavior 221.) Offered irregularly. (change in existing course—eff. fall 14)

Animal Genetics

Animal Genetics
New and changed courses in Animal Genetics (ANG)
Upper Division
101. Animal Cytogenetics (3)
Laboratory/discussion—1 hour, laboratory—6 hours. Prerequisite: Biological Sciences 101, 102 or the equivalent. Principles and techniques of cytogenetics applied to animal systems; chromosome harvest techniques, analysis of mitosis and meiosis, karyotyping, chromosome banding, cytogenetic mapping, chromosome structure and function, comparative cytogenetics. GE credit: SciEng | SE. —Delany (change in existing course—eff. spring 15)

105. Horse Genetics (2)
Lecture—2 hours. Prerequisite: course 15; Biological Sciences 101. Coat color, parentage testing, medical genetics, pedigrees, breeds, the gene map and genus Equus. Emphasis on understanding horse genetics based on the unity of mammalian genetics and making breeding decisions based on fundamental genetic concepts. GE credit: SciEng | SE, SL.—S. [F] Famula (change in existing course—eff. spring 15)

107. Genetics and Animal Breeding (5)
Lecture—4 hours; laboratory—3 hours. Prerequisite: Biological Sciences 101. Principles of quantitative genetics applied to improvement of livestock and poultry. Effects of mating systems and selection methods are emphasized with illustration from current breeding practices. GE credit: SciEng | SE.—F. [F] Medrano, Miller (change in existing course—eff. spring 15)

111. Molecular Biology Laboratory Techniques (4)
Lecture—2 hours; laboratory—6 hours. Prerequisite: Biological Sciences 1C, 101, 102, 103. Introduction to the concepts and techniques used in molecular biology; the role of this technology in both basic and applied animal research, and participation in laboratories using some of the most common techniques in molecular biology. GE credit: SciEng | SE, SL, VL, WE.—F. [F] Kuehlt, Murray (change in existing course—eff. spring 15)

Graduate
204. Theory of Quantitative Genetics (3)
Lecture—3 hours. Prerequisite: course 107 or the equivalent. Theoretical basis of quantitative genetics and the consequences of Mendelian inheritance. Concepts used to estimate quantitative genetic differences and basis for partitioning the phenotypic variance. (change in existing course—eff. spring 15)
Animal Science

New and changed courses in Animal Science (ANS)

Lower Division

2. Introductory Animal Science (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 1 and Biological Sciences 1A recommended. Growth, reproduction, lactation, inheritance, nutrition, and disease control in domesticated animals and species used in aquaculture; the application of sciences to animal production. GE credit: ScEng | SE, Wrt | SE, Sl, Vl, WE. — F. (F.) — Murray

12. Animal Science: Basic Principles and Application (3)
Lecture—3 hours. Overview of domestic and global animal industries. Exploration of production systems, animal biology, genetics, anatomy, physiology, reproduction, health, behavior, research, biotechnology and welfare. GE credit: ScEng | SE. — change in existing course—eff. spring 15

17. Canine Behavior: Learning and Cognition (3)
Lecture—3 hours. Domestic dog behavior from basic principles of learning to complex cognitive behaviors; interaction between learning and cognition including how these processes contribute to interactions with humans; basic genetic correlates of learning and cognition. — change in existing course—eff. spring 15

12. Animal Science: Basic Principles and Application (3)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 107 and Animal Science 205; course 204 recommended. Procedures for the genetic evaluation of individuals to include selection indices and mixed model evaluation for single and multiple traits. Methods of estimating genetic trends. Offered in alternate years. — Famula

(change in existing course—eff. spring 15)

41L. Domestic Animal Production Laboratory (2)
Discussion—1 hour; laboratory—3 hours. Prerequisite: course 41 may be taken concurrently. Animal production principles and practices, including five field trips to dairy cattle, beef cattle, sheep, and swine operations and campus labs. (P/NP grading only.) GE credit: QL, SE, SL, VL, WE. — F, W, S. (F, W, S.) Miller, Sainz

(change in existing course—eff. spring 15)

49A. Animal Management Practices: Aquaculture (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49B. Animal Management Practices: Beef (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, S. (F, S.)

(change in existing course—eff. spring 15)

49C. Animal Management Practices: Dairy (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49D. Animal Management Practices: Goats (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, S. (F, S.)

(change in existing course—eff. spring 15)

49E. Animal Management Practices: Horses (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49F. Animal Management Practices: Laboratory Animals (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — W, S. (W, S.)

(change in existing course—eff. spring 15)

49G. Animal Management Practices: Meats (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49H. Animal Management Practices: Poutry (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49I. Animal Management Practices: Sheep (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49J. Animal Management Practices: Swine (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

49K. Animal Management Practices: Captive and Companion Avian (2)
Discussion—1 hour; laboratory—3 hours. Application of the principles of elementary biology to the management of a specific animal species. Up to four different topics may be taken. (P/NP grading only.) — F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

Upper Division

103. Animal Welfare (4)
Lecture—2 hours; discussion—2 hours. Prerequisite: course 104 or Neurobiology, Physiology, and Behavior 102 or the equivalent or consent of instructor. Upper division standing. Application of principles of animal behavior and physiology to assessment and improvement of the welfare of wild, captive, and domestic animals. Topics include animal pain, stress, cognition, motivation, emotions, and preferences, as well as environmental enrichment methods. GE credit: ScEng | SE, SL. — F. (F.) Mench

(change in existing course—eff. fall 14)

106. Domestic Animal Behavior Laboratory (2)
Laboratory—6 hours. Prerequisite: course 104 or the equivalent. Research experience with the behavior of large domestic animals. Experimental design, methods of data collection and analysis, and reporting of experimental results. GE credit: ScEng, Wrt | QL, SE, Sl, Vl, WE. — S. (S.) Tucker

(change in existing course—eff. spring 15)

118. Fish Production (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Wildlife, Fish, and Conservation Biology 120 and 121. Current practices in fish production; relationship between the biological aspects of a species and the production systems; husbandry, management and marketing practices used. Emphasis on species currently reared in California. GE credit: ScEng | SE.

(change in existing course—eff. spring 15)

119. Invertebrate Aquaculture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 1B. Management, breeding and feeding of aquatic invertebrates; application of basic principles of physiology, reproduction, and nutrition to production of mollusks and crustaceans for human food; emphasis on integration of species biology and managerial techniques on production efficiencies. GE credit: ScEng | SE.

(change in existing course—eff. spring 15)

120. Principles of Meat Science (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A. Anatomical, physiological, developmental, and biochemical aspects of muscle underlying the conversion of muscle to meat. Includes meat processing, preservation, microbiology, and public health issues.
associated with meat products. (Same course as Food Science and Technology 120.) GE credit: SciEng | SE; [change in existing course—eff. spring 15]

120L. Meat Science Laboratory (2)
Discussion—1 hour; laboratory—3 hours. Prerequisite: Biological Sciences 2A; course 120 (may be taken concurrently). Laboratory exercises and student participation in transformation of live animal to carcass, and structural and biochemical changes related to meat quality, chemical and sensorial evaluation of meat, and field trips to packing plant and processing plant. GE credit: SciEng | SE; [change in existing course—eff. fall 15]

126. Equine Nutrition (3)
Lecture—3 hours. Prerequisite: course 15, Nutrition 115. Equine digestion, absorptive physiology, diet development and evaluation, and the relationship of the topics to recommended feeding practices and nutritional portfolios. Offered in alternate years. GE credit: SciEng | SE; [change in existing course—eff. fall 15]

129. Environmental Stewardship in Animal Production Systems (3)
Lecture—3 hours. Prerequisite: Biological Sciences 10 or 1A and 1B, Chemistry 2A; 2B, 8A, 8B. Class size limited to 24 students. Management principles of environmental stewardship for grazing lands, animal feeding, operations and aquaculture operations; existing regulations, sample analyses, interpretation and utilization of data, evaluation of alternative practices, and policy development. GE credit: SciEng | SE; SL—W. (W.) Meyer [change in existing course—eff. fall 14]

131. Reproduction and Early Development in Aquatic Animals (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: Molecular and Cellular Biology 150; Wildlife, Fish and Conservation Biology 120, 121, or consent of instructor. Physiological and developmental functions related to reproduction, breeding efficiency and fertility of animals commonly used in aquaculture. GE credit: SciEng | SE; WE. [change in existing course—eff. spring 15]

136. Techniques and Practices of Fish Culture (3)
Lecture—1 hour; laboratory—6 hours. Prerequisite: general biology and chemistry; course 2. Daily care and maintenance of fish in residential aquaria, research and commercial facilities. Biological and environmental factors important to sound management of fish. Laboratories focus on fish husbandry, management and care and include growth trials and biochemical assays. GE credit: SciEng | SE; SL—W. (S.) Hung [change in existing course—eff. spring 15]

141. Equine Enterprise Management (4)
Lecture/discussion—4 hours. Prerequisite: course 115; Economics 1A, 1B, recommended. Examination of the concepts and principles involved in the operation of an equine enterprise. Essential aspects of equine enterprise management, including equine law, marketing, cash flow analysis, and impact of state and federal regulations. Offered in alternate years. GE credit: SocSci, Writ | SS; W. [change in existing course—eff. winter 15]

144. Beef Cattle and Sheep Production (4)
Lecture—3 hours; laboratory—3 hours; one or two Saturday field trips. Prerequisite: course 41, Animal Genetics 107. Nutrition 115, or consent of instructor; a course in Range Science and a course in microcomputing are recommended. Genetics, physiology, nutrition, economics and business in beef cattle and sheep production. Resources used, species differences, range and feedlot operations. Emphasis on integration and information needed in methods for management of livestock enterprises. GE credit: SciEng | OL, QL, SE, SL, VL, WE; [S. (S.) Sainz [change in existing course—eff. spring 15]

145. Meat Processing and Marketing (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 143 or 144 or consent of instructor. Distribution, processing and marketing of meat and meat products. Meat and meat animal grading and pricing. Government regulations and social/consumer concerns. Future trends and impact on production management practices. Includes poultry. GE credit: SciEng | SE; [change in existing course—eff. spring 15]

147. Dairy Processing and Marketing (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: course 146 or consent of instructor. Examination of distribution systems, processing practices, product quality, impact of government policy (domestic and foreign), marketing alternatives and product development. GE credit: SciEng | SE; [change in existing course—eff. spring 15]

149. Forrrier Science (3)
Lecture—3 hours. Prerequisite: course 115. In-depth examination of the structure-function relationship of the equine hoof and how it relates to conformation, injury and performance. Offered irregularly. GE credit: SciEng | SE; [change in existing course—eff. spring 15]

149L. Forrrier Science Laboratory (1)
Laboratory—3 hours. Prerequisite: course 149 (may be taken concurrently) or consent of instructor. Art and science of horseshoeing in equine related fields. Proper use of the tools, materials and techniques in the fabrication of shoes and safe preparation of the hoof for application of shoes. (P/NP grading only.) [change in existing course—eff. spring 15]

194HB. Undergraduate Honors Thesis in Animal Science (4)
Lecture—1 hour; laboratory—9 hours. Prerequisite: Neurobiology, Physiology and Behavior 101, Animal Biology 102; minimum cumulative GPA of 3.200 and selection by the Honors Selection Committee; consent of instructor. Students will carry out a research project [change in existing course—eff. spring 15]

Graduate

200. Strategies in Animal Production (4)
Lecture/discussion—4 hours. Prerequisite: consent of instructor. Examines the forces and issues in animal agriculture through the strategic management process. [change in existing course—eff. spring 15]

206. Models in Agriculture and Nutrition (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: Mathematics 168; Statistics 108. Basic model building techniques and principles for statistical and systems simulation models. Optimization techniques for non-linear experimental designs and management models are presented. Quantitative analysis and evaluation of linear and non-linear equations used in agriculture and nutrition. [change in existing course—eff. spring 15]

259. Literature in Animal Science (1)
Seminar—1 hour. Prerequisite: graduate standing. Critical presentation and analysis of recent journal articles in animal science. May be repeated for credit up to nine times. (S/U grading only) [change in existing course—eff. spring 15]

Anthropology

New and changed courses in Anthropology (ANT)

Lower Division

1. Human Evolutionary Biology (4)
Lecture—3 hours; discussion—1 hour. Processes and course of human evolution; primatology; biological and social diversity within Homo sapiens; human paleontology. GE credit: SciEng, Div | Writ | SL, SE, SL, VL, WE—F, W, S. [F, W, S.] [change in existing course—eff. spring 15]

1Y. Human Evolutionary Biology (4)
Web virtual lecture—2 hours; lecture/discussion—1 hour; laboratory/discussion—1 hour. Evolutionary theory and mechanisms of evolution; basic populational and quantitative genetics; primatology; biological and cultural diversity within Homo sapiens; paleoanthropology. Students may not take both course 1 and course 1Y for credit. GE credit: SE, W, WE—F, W, S. [F, W, S.] [change in existing course—eff. spring 15]

2. Cultural Anthropology (4)
Lecture—3 hours; discussion—1 hour. Introduction to cultural diversity and the methods used by anthropologists to account for it. Family relations, economic activities, politics, gender, and religion in a wide range of societies. Current topics of sociological and political interest to contemporary urban and peasant societies. GE credit: SocSci, Div | Writ | ACGH, DD, SS, WC, WE—F, W, S, Su; [F, W, S, Su.] [change in existing course—eff. spring 15]

3. Introduction to Archaeology (4)
4. Introduction to Anthropological Linguistics (4)
Lecture—3 hours; discussion—1 hour. Exploration of the role of language in social interaction and world view, minority languages and dialects, bilingualism, literacy, the social motivation of language change. Introduction of analytical techniques of linguistics and demonstration of their relevance to language in sociocultural issues. Offered in alternate years. GE credit: SocSci, Div, Writ | SS, WC, WE. (change in existing course—eff. spring 15)

5. Proseminar in Biological Anthropology (4)
Seminar—3 hours; term paper. Prerequisite: course 1 and consent of instructor. Course primarily for majors. Integration of related disciplines in the study of biological anthropology through discussion and research. Principles of past races in human adaptation to the environment. Offered irregularly. GE credit: SciEng, Writ | SE, OL, WE. —Isbell (change in existing course—eff. spring 15)

15. Behavioral and Evolutionary Biology of the Human Life Cycle (5)
Lecture—3 hours; discussion—1 hour. Term paper. Introduction to the biology of birth, childhood, aging, the family, old age, and death. Examines comparative characteristics of nonhuman primates and other animals as well as cross-cultural variation in human behavior. GE credit: SciEng, Div, Writ | SE, SL, WE. —Crofoot (change in existing course—eff. spring 15)

20. Comparative Cultures (4)
Lecture—3 hours; discussion—1 hour. Introduction to the anthropological study of cultural diversity. Case studies of eight societies will be presented to illustrate and compare the distinctive features of major cultural regions of the world. Concludes with a discussion of modernization. GE credit: ArtHum or SocSci, Div | ACGH, AH or SS, DD, WC, WE. —Sawyer (change in existing course—eff. spring 15)

24. Ancient Crops and People (4)
Lecture—3 hours; discussion—1 hour. The archaeological evidence for domestication of plants and the origins of agricultural societies. Anthropological context of agriculture and the effects on sexual division of labor, social inequality, wealth accumulation, warfare, human health, and sedentarism. Offered in alternate years. GE credit: SocSci, Div, Writ | SS, WC, WE. —Eerkens (change in existing course—eff. spring 15)

25. Ancient Animals and People (2)
Lecture—2 hours. History of human and animal relationships and how animals have influenced social and economic structures of past societies. Why and when humans used animals in the context of hunting, domestication, secondary products, ritual, companionship, and conservation. Offered in alternate years. GE credit: SocSci | SS. —Darwent, Steele (new course—eff. winter 15)

28. Prehistoric Origins of Art (2)
Lecture/discussion—2 hours. Interdisciplinary look at the earliest evidence for art and symbolic behavior. Method and techniques to investigate Prehistoric art. Interpretative framework and relevance for understanding the role of symbolic activities in traditional societies. Offered in alternate years. GE credit: SocSci | SS, —Zwicky (new course—winter 15)

30. Sexualities (4)
Lecture/discussion—4 hours. Introduction to the study of sexuality, particularly to the meanings and social organization of same-sex sexual behavior across cultures and through time. Biological and cultural approaches will be compared, and current North American issues placed in a wider comparative context. GE credit: ArtHum or SocSci, Div, ACGH, AH or SS, DD, WC, WE. —Donham (change in existing course—eff. spring 15)

32. Drugs, Science and Culture (4)
Lecture—3 hours; discussion—1 hour. Drugs, politics, science, society in a cultural perspective. Emphasis on roles of science, government and the media in shifting attitudes toward alcohol, marihuana, Prozac and other pharmaceuticals; drug laws, war on drugs and global trade in sugar, opium, cocaine. (Same course as Science and Technology Studies 32.) GE credit: SocSci, Div, Writ | SS, WC, WE. —Borgerhoff Mulder (change in existing course—eff. spring 15)

34. Cultures of Consumerism (4)
Lecture/discussion—4 hours; term paper. Aspects of modern consumer cultures in capitalist and socialist countries. Transformations of material cultures over the past century. Case studies on the intersections of gender, class, and culture in everyday consumption practices. Offered irregularly. GE credit: SocSci, Div, Writ | SS, WC. (change in existing course—eff. spring 15)

50. Evolution and Human Nature (4)
Lecture—3 hours; discussion—1 hour. Evolutionary analyses of human nature, beginning with Lamarck, Darwin, and others and extending through social Darwinism controversies to contemporary evolutionary anthropology research on human diversity in economic, mating, life-history, and sociocultural behaviors. GE credit: SciEng or SocSci, Div, Writ | SE or SS, SL, WE. (change in existing course—eff. spring 15)

54. Introduction to Primatology (4)
Lecture/discussion—3 hours; term paper. Basic survey of the primates as a separate order of mammals; natural history and evolution of primates; consideration of hypotheses for their origin. GE credit: SciEng or SocSci, Div, Writ | SE, SL, WE.—F. (S.) Isbell (change in existing course—eff. spring 15)

Upper Division

100. Theory in Social-Cultural Anthropology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Discussion of the theoretical and philosophical developments in cultural anthropology since the 19th century to the present. Not open for credit to students who have completed course 137. (Former course 137) GE credit: SocSci | SS, WE. —F. (F) Donham (change in existing course—eff. spring 15)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or 2 or Environ- ment and Policy 30 or Evolution and Ecology 100 or Biological Sciences 101. Interdisciplinary study of diversity and change in human societies, using frameworks from anthropology, evolutionary ecology, history, archaeology, psychology, and other fields. Topics include population dynamics, subsistence transitions, family organization, disease, economics, warfare, politics, and resource utilization. (Same course as Environmental Science and Policy 101.) Offered in alternate years. GE credit: SocSci, Div, Writ | SS, WC, WE. —Borgerhoff Mulder (change in existing course—eff. spring 15)

103. Indigenous Peoples and Natural Resource Conservation (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or Geology 1 or Environmental Science and Policy 30 or Evolution and Ecology 100 or Biological Sciences 101. Interdisciplinary study of diversity and change in human societies, using frameworks from anthropology, evolutionary ecology, history, archaeology, psychology, and other fields. Topics include population dynamics, subsistence transitions, family organization, disease, economics, warfare, politics, and resource utilization. (Same course as Environmental Science and Policy 101.) Offered in alternate years. GE credit: SocSci, Div, Writ | SS, WC, WE.—Borgerhoff Mulder (change in existing course—eff. spring 15)

104N. Cultural Politics of the Environment (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Political economy of environmental struggles. Relationship between social inequality (based on race, class, and/or gender) and ecological degradation. Anticipation of local peoples, national policy, and the international global economy in the contestation over the use of environmental resources. Not open for credit to students who have completed course 134N. (Former course 121N) GE credit: SocSci, Div | ACGH, DD, OL, SS, WC, WE.—Borgerhoff Mulder (change in existing course—eff. spring 15)

109. Visualization in Science: A Critical Introduction (4)
Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 2 or Science and Technology Studies 1 or Science and Technology Studies 121. GE credit: SciEng or SocSci, Div | ACGH, DD, OL, SS, WC, WE.—Eng

117. Language and Society (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 4, or Linguistics 1 and course 2. Consideration of language in its social context. Methods of data collection and analysis of socially significant linguistic variables. Contributions of the study of contextualized speech to linguistic theory. Offered irregularly. GE credit: SocSci, Div, Writ | SS, WC, WE. —Corrigan (change in existing course—eff. spring 15)

121. Special Topics in Medical Anthropology (4)
Lecture/discussion—4 hours. Prerequisite: course 2 or Science and Technology Studies 1. Introduction to critical medical anthropology. Topics include anthropological analysis of biomedicine, psychiatry, systems of knowledge and healing, the body, emotions, and clinical encounters in a cross-cultural perspective. (Same course as Science and Technology Studies 121) GE credit: SocSci, Div, Writ | SS, WC, WE. —Giordano (change in existing course—eff. spring 15)

122B. Anthropology and Political Economy (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Survey of anthropological approaches to the study of political organizations, inter-relationships among political institutions, economic infrastructures and cultural complexity. Not open for credit to students who have completed course 133A. (Former course 122B.) GE credit: SocSci, Div, Writ | SS, WC, WE. —Borgerhoff Mulder (change in existing course—eff. spring 15)

123AN. Resistance, Rebellion, and Popular Movements (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or the equivalent. Analysis of popular protest in Third World and indigenous societies ranging from covert resistance to national revolts. Comparative case studies and theories of peasant rebellions, millenarian movements, social bands, Indian “wars”, ethnic and regional conflicts, gender and...
class conflicts. Not open for credit to students who have completed course 123B. [Former course 123D. Offered irregularly. GE credit: SocSci | SS, WE, WC, WRT] (change in existing course—eff. spring 15)

125A. Structuralism and Symbolism (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Survey of anthropological approaches to understanding the logic of structuralism and symbolism in cultural analysis. Focus on how structural and symbolic interpretations relate to cultural and linguistic universals and to the philosophical basis of relativism in the social sciences. [Former course 125.] Offered irregularly. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

125B. Postmodernism(s) and Culture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. The U.S.-European postmodern condition. "Modernity" as an incomplete project for subordinated groups. The economic, social, and political conditions leading to postmodern aesthetics, in comparison with postcolonialism, feminism and minority discourse. Offered irregularly. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

126A. Anthropology of Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Theories of development and current critiques. Colonial legacies and post-colonial realities. Roles of the state and NGOs, population migrations, changing gender identities, cash-earning strategies, and sustainability issues. Stresses importance of cultural understandings in development initiatives. Case studies emphasizing non-western, not open for credit to students who have completed course 126. [Former course 126.] GE credit: SocSci, Div | WRT | SS, WC, WE.—Smith (change in existing course—eff. spring 15)

126B. Women and Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Current Third World and Western development issues concerning women in agriculture, industry, international division of labor, political movements, revolutions, politics of health, education, family and reproduction. Impact of colonialism, modernization, the world system, and international feminism on women and development. Not open for credit to students who have completed course 126. [Former course 123.] GE credit: SocSci, Div | WRT | SS, WC, WE.—Smith (change in existing course—eff. spring 15)

127. Urban Anthropology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Survey of approaches to urban living: political structures, organization of labor, class relations, world views. The evolution of urban life and its contemporary dilemmas. Cross-cultural comparisons discussed through case studies. GE credit: SocSci, Div | WRT | SS, WC, WE.—Srinivas, Zhang (change in existing course—eff. spring 15)

128A. Kinship and Social Organization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Examination of examination of kinship, descent, marriage, household and family organizations; the theories that account for variation, and recent advances in the treatment of these data. Not open for credit to students who have completed course 128. [Former course 128.] Offered irregularly. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

128B. Self, Identity, and Family (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Exploration of self, identity, and family systems cross-culturally. Impact of class, gender, race, ethnicity, ruralization, urbanization, and globalization on notions of selfhood in different social contexts. Not open for credit to students who have completed course 129. [Former course 129.] Offered in alternate years. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

129. Health and Medicine in a Global Context (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 2 or Science and Technology Studies 1. Recent works in medical anthropology and the science of medicine dealing with social and cultural aspects of global health issues such as AIDS, pandemics, clinical trials, cultural differences in illnesses, diabetes, organ trafficking, medical technologies, illness narratives, and others. [Same course as Science and Technology Studies 129.] GE credit: SocSci, Div | WRT | SS, WC, WE.—Dumit (change in existing course—eff. spring 15)

130A. Cultural Dimensions of Globalization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. The cultural dimensions of recent economic and political changes, often termed "globalization." Offered in alternate years. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

130B. Migration and the Politics of Place and Identity (4)
Lecture/discussion—4 hours. Prerequisite: course 2 or consent of instructor. Analysis of the complex interactions between ecological dynamics and political processes employing the emerging approaches of postmodern urban studies. Students will organize and conduct individual research projects. Offered in alternate years. GE credit: SocSci | SS, WC, WE.—de la Cadena (change in existing course—eff. spring 15)

131. Ecology and Politics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Analysis of the complex interactions between ecological dynamics and political processes employing the emerging approaches of postmodern urban studies. Students will organize and conduct individual research projects. Offered in alternate years. GE credit: SocSci | SS, WC, WE.—de la Cadena (change in existing course—eff. spring 15)

132. Psychological Anthropology (4)
Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 2 or Science and Technology Studies 1. History of the relationship between anthropology and psychoanalysis. Exploration of anthropological methods, cross-cultural psychological, contemporary ethnopsychotherapy, studies of personhood, possession, magic, altered states, subjectivity, and definitions of the normal and the pathological in different contexts and cultures. GE credit: SocSci, Div | WRT | SS, WC, WE.—Giorlando (change in existing course—eff. spring 15)

134. Buddhism in Global Culture (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: one lower division course in Anthropology, Sociology, History, or Religious Studies. Class size limited to 30 students. Buddhist meditation and ritual as a cultural system that adapts to global and local forces of change. Anthropological theory and method in understanding global culture transmission, including Buddhist reform movements in Asian and other religious traditions. Offered in the West. GE credit: ArtHum or SocSci, Div | WRT | AH or SS, WC, WE.—Klima (change in existing course—eff. spring 15)

136. Ethnographic Film (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Overview of role of film in anthropology and its advantages and limitations in comparison to written ethnographic descriptions. Essential features of ethnographic films. Film production in anthropological research and problems encountered in producing films in the field. Offered irregularly. GE credit: SocSci, Div | WRT | SS, VL, WC, WE. (change in existing course—eff. spring 15)

137. Meditation and Culture (4)
Lecture/discussion—3 hours; discussion—1 hour. Prerequisite: one lower division course in Anthropology, Sociology, History, Philosophy, or Religious Studies. Class size limited to 50 students. Study and practice of the relation between meditation and cultural conditioning; comparison of Buddhist practice with other historical constructions of mind, body, brain, thought, emotion, and self. Limited enrollment.—Klima (change in existing course—eff. spring 15)

138. Ethnographic Research Methods in Anthropology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 125 and 137. Basic concepts in ethnographic research and approaches to ethnographic field research. Problem formulation, research design, qualitative and quantitative data collection procedures, and techniques for analyzing, retrieving, and interpreting quantitative data. Ethnographic description and constructed inference. Students will organize and conduct individual research projects. Offered in alternate years. GE credit: SocSci | SS, WC, WE.—de la Cadena (change in existing course—eff. spring 15)

139A. Race, Class, Gender Systems (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Understanding and evaluating systems of race/gender inequality, concentrating on the ways in which beliefs about descent, “blood,” and biological difference interact with property and marital systems to affect the distribution of resources and power. Not open for credit to students who have completed course 139. [Former course 139.] Offered irregularly. GE credit: SocSci, Div | WRT | AGCH, DD, SS, WC, WE.—de la Cadena (change in existing course—eff. spring 15)

139B. Gender and Sexuality (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2 or consent of instructor. Gender and sexual liberty in foraging bands, agricultural and pastoral tribes, agricultural and industrial states. Debates on cultural evolution and diversity of gender hierarchies. Impact of politics, economics, religion, social practices, women’s movements on gender and sexuality. Culture, nature, and sexuality. Not open for credit to students who have completed course 130. [Former course 130.] Offered irregularly. GE credit: SocSci, Div | WRT | AGCH, DD, SS, WC, WE. (change in existing course—eff. spring 15)

140A. Cultures and Societies of West and Central Africa (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Ethnographic survey of West Africa and Congo Basin with analyses of representative societies which illustrate problems of global theoretical concern. Major consideration will be the continuities and discontinuities between periods prior to European contact and the present. Offered irregularly. GE credit: SocSci, Div | WRT | SS, WC, WE. (change in existing course—eff. spring 15)

140B. Cultures and Societies of East and South Africa (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Ethnographic survey of Eastern and Southern Africa with analyses of selected societies which illustrate problems of interest to anthropologists. Major consideration will be given to continuities and
discontinuities between periods prior to European contact and the present. GE credit: SocSci, Div, Wrt | SS, WC, WE.—D. G. Smith
(change in existing course—eff. spring 15)

143A. Ethnology of Southeast Asia (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Patterns of culture and social organization from prehistoric to the present, in the context of historical, ecological, economic, and political settings. Emphasis on the relation of ethnic minorities to national states. Offered irregularly. GE credit: SocSci, Div, Wrt | SS, WC, WE.
(change in existing course—eff. spring 15)

144. Contemporary Societies and Cultures of Latin America (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 5. Offered in alternate years. GE credit: SocSci, Div, Wrt | SS, WC, WE.—de la Cadena
(change in existing course—eff. spring 15)

145. Performance, Embodiment, and Space in South Asia (4)
Lecture/discussion—4 hours. Prerequisite: course 2 or consent of instructor. South Asian cultures and societies with a focus on performance, embodiment, and space from several disciplinary fields. Topics may include colonialism, nationalism, religious traditions, media, popular culture, cities, social movements, consciousness of body, identity, gender, and diasporas. GE credit: ArtsHum or SocSci, Div, Wrt | AH or SS, WC, WE.—Srivivas
(change in existing course—eff. spring 15)

146N. Topics in the Anthropology of Europe (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Recent ethnographies of different nation-states and societies of Europe. Topics include the question of old and new boundaries, historical and contemporary constructions of Europe, migration and ethnicity, citizenship, belonging, multiculturalism, and post/colonialism. Offered in alternate years. GE credit: SocSci, Div, Wrt | SS, WC, WE.—Giordano
(change in existing course—eff. spring 15)

148A. Culture and Political Economy in Contemporary China (4)
Lecture/discussion—4 hours. Prerequisite: course 2 or consent of instructor. Examining contemporary Chinese culture and political economy through reading ethnographic studies on recent transformations in rural and urban Chinese society. Special attention is given to state power, popular culture, spatial mobility, city space, and gender. GE credit: ArtsHum or SocSci, Div, Wrt | SS, WC, WE.—Zhang
(change in existing course—eff. spring 15)

149A. Traditional Japanese Society (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. Patterns of culture and social organization from prehistoric to early twentieth-century Japan. Origins, prehistoric, and traditional religious and political systems, marriage and kinship, language and culture. Changes and continuities in traditional and contemporary Japanese culture are addressed. Offered irregularly. GE credit: SocSci, Div, Wrt | SS, WC, WE.
(change in existing course—eff. spring 15)

149B. Contemporary Japanese Society (4)
Lecture—3 hours; discussion—1 hour. Introduction to contemporary Japanese social structure, social organization and political culture. Analysis of rural-urban cultural continuities and contrasts, class relations, political and economic systems, kinship, sex/ gender systems, contemporary religious beliefs and behavior, conflict, consensus, and cultural stereotypes. Offered irregularly. GE credit: SocSci, Div, Wrt | SS, WC, WE.—Shibamoto-Slimmer
(change in existing course—eff. spring 15)

151. Primate Evolution (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or Biological Sciences 18. Origin and relations of the primatians, monkeys, and apes. GE credit: SciEng, Wrt | SE, WE.—S. (S.) Isbell
(change in existing course—eff. spring 15)

152. Human Evolution (5)
Lecture—3 hours; discussion—1 hour; term paper. Prerequisite: course 1 or Biological Sciences 18. Nature and results of the evolutionary processes involved in the formation and differentiation of hominid. GE credit: SciEng, Wrt | SE, WE.—W. (W.) Zwyns
(change in existing course—eff. spring 15)

153. Human Biological Variation (5)
Lecture—3 hours; discussion—1 hour; term paper. Prerequisite: course 1 or Biological Sciences 18. Origin, adaptive significance and methods of analysis of genetic differences among human populations. Special attention in relation to racial differences such as those in blood groups, plasma proteins, red cell enzymes, physiology, morphology, pigmentation and dermatoglyphics. GE credit: SciEng, Wrt | QL, SE, WE.—D. G. Smith
(change in existing course—eff. spring 15)

154A. The Evolution of Primate Behavior (5)
Lecture—3 hours; discussion—1 hour; term paper. Prerequisite: course 1. Examines ecological diversity and evolution of social systems of primates, monkeys, and apes, placing the social behavior of the primates in the context of appropriate ecological and evolutionary theory. GE credit: SciEng, Wrt | SE, VL, WE.—F. (F.) Isbell
(change in existing course—eff. spring 15)

154BN. Primate Evolutionary Ecology (5)
Lecture—3 hours; lecture/discussion—1 hour; term paper. Prerequisite: course 1 or introductory course in evolutionary biology or ecology. Examination of the ecology of primates within an evolutionary framework. Theoretical concepts in individual, population, and community ecology, illustrated with primate and non-primate examples. Includes topics in primate and rainforest conservation. GE credit: SciEng, Wrt | QL, SE, VL, WE.
(change in existing course—eff. spring 15)

154C. Behavior and Ecology of Primates (2)
Lecture/discussion—2 hours. Prerequisite: course 54, 154A, or 154BN; Statistics 13 or its equivalent. Scientific methods of studying, describing and analyzing the behavior and ecology of primates. Offered in alternate years. (P/NP grading only.) GE credit: SE.—S. (S.) Crofoot
(change in existing course—eff. spring 15)

154CL. Laboratory in Primate Behavior (4)
Laboratory—6 hours; term paper. Prerequisite: course 54, 154A, or 154BN; Statistics 13 or its equivalent. Design and conduct of scientific “field studies” of the behavior of group-living primates at the California National Primate Research Center. Offered in alternate years. GE credit: SciEng | QL, SE, WE.—S. (S.) Crofoot
(change in existing course—eff. spring 15)

156A. Human Paleontology (2)
Lecture—2 hours; laboratory—4 hours. Prerequisite: course 1 or equivalent. Not open to students who have previously completed course 156. Human skeleton from archaeological, forensic, and paleontological perspectives. Includes instruction: nomenclature, variation with sex and age, function, evolution, growth, and development of bones and teeth. Hands-on study and identification of human skeletal remains. GE credit: SciEng | SE.—F. (F.) Weaver
(change in existing course—eff. spring 15)

156B. Advanced Human Paleontology (4)
Lecture—2 hours; laboratory—4 hours. Prerequisite: course 156A or equivalent. Not open to students who have previously completed course 156. Human skeletons from archaeological, forensic, and paleontological contexts. Bone and tooth structure, growth, and development; measurement, statistics, and bio-mechanics; assessment of age, sex, weight, height, and ancestry; and indicators of illness, injuries, diet, and activities. Offered in alternate years. GE credit: SciEng | SE.—S. (S.) Weaver
(change in existing course—eff. spring 15)

157. Anthropological Genetics (3)
Lecture—3 hours. Prerequisite: course 1 or Biological Sciences 1A. Method and theory of genetic and genomic analysis of molecular evolution of human and non-human primate populations. Special attention to the molecular evolutionary transition to humans and genetic differences among extant human populations and their adaptive significance. Offered in alternate years. GE credit: SciEng | QL, SE.—D. G. Smith
(change in existing course—eff. fall 15)

157L. Laboratory in Anthropological Genetics (2)
Lecture—1 hour; laboratory—3 hours. Prerequisite: course 1 or Biological Sciences 1A; course 157 (concurrently or following). Methods for understanding genetic variation in human blood group antigens, serum proteins and red cell enzymes (hemaglutination), general electrophoresis on starch, cellulose acetate and polyacrylamide gels, and immunoelectrophoresis on agarose. (P/NP grading only.) Offered irregularly. GE credit: QL, SE.—D. G. Smith
(change in existing course—eff. fall 15)

158. The Evolution of Females and Males: Biological Perspective (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or consent of instructor. Curating new theoretical frameworks for explaining the evolution of sex differences and for understanding the interrelationship between biological processes and cultural constructions of gender roles. GE credit: SciEng, Div, Wrt | OL, WE.
(change in existing course—eff. spring 15)

159. Molecular Anthropology of Native America (4)
Seminar—3 hours; term paper. Prerequisite: course 1 or Biological Sciences 1B or consent of instructor. Use of DNA and other genetic polymorphisms to test hypotheses regarding genetic relationships among different Native American tribal groups and about prehistoric population replacements and migrations to and within the Americas. Integration with cranio-metric, archaeological, paleoenvironmental, linguistic and ethnographic evidence. Offered irregularly. GE credit: SciEng | QL, SE.
(change in existing course—eff. spring 15)

160. Neandertals and Modern Human Origins (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or equivalent. Origins, evolution, and disappearance of Neandertals. Emergence of humans like us in both anatomy and behavior. Interpretation of the fossil and archaeological records of Europe and Africa. Genetics of living and fossil humans. Offered in alternate years. GE credit: SciEng | SE.—Weaver
(change in existing course—eff. spring 15)

170. Archaeological Theory and Method (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1 and 3. Introduction to history and development of archaeological theory and method, with par-
172. **New World Prehistory: The First Arrivals (4)**
Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or consent of instructor. Survey of data relating to the peopling of the New World. GE credit: SocSci, Div, Wrt | SS, WC, WE.—W. (W.) Darwent, Zhang
(change in existing course—eff. spring 15)

173. **New World Prehistory: Archaic Adaptations (4)**
Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or consent of instructor. Survey of the prehistory of Europe from its earliest human inhabitants, to the Neanderthals and first modern humans, and through the early and complex societies. Analysis and interpretation of the European archaeological record for understanding human dispersals into Europe. Offered in alternate years. GE credit: SocSci | SS, WC, WE.—Eerkens
(change in existing course—eff. spring 15)

174. **European Prehistory (4)**
Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or consent of instructor. Survey of the prehistory of Europe from its earliest human inhabitants, to the Neanderthals and first modern humans, and through the early and complex societies. Analysis and interpretation of the European archaeological record for understanding human dispersals into Europe. Offered in alternate years. GE credit: SocSci, Div, Wrt | SS, WC, WE.—Eerkens
(change in existing course—eff. spring 15)

175. **Andean Prehistory: Archaeology of the Inca Ancestors (4)**
Lecture—3 hours; discussion—1 hour. Prerequisite: course 3. Prehistory of the Andean region, especially Peru, from the earliest hunting and gathering societies through the Inca. Focus on the use of archaeological data to reconstruct ancient human adaptations to the varied Andean environments. Offered in alternate years. GE credit: SocSci | SS, WC, WE.—Eerkens
(change in existing course—eff. spring 15)

180. **Zooarcheology (4)**
Lecture—2 hours; discussion/laboratory—3 hours. Prerequisite: course 1 and 3 or consent of instructor. Restricted to junior or senior standing. Theories and methods for studying animal skeletal remains from archaeological sites. Identification and quantification of zooarchaeological material, cultural and natural processes affecting animal bones and postcranial and post depositional, and use of faunal remains for determining past human diets and past environments. Offered in alternate years. GE credit: SciEng | SE.—W. (W.) Darwent, Steele
(change in existing course—eff. spring 15)

181. **Field Course in Archaeological Method (9)**
Lecture—6 hours; daily field investigation. Prerequisite: course 3. On-site course in archaeological methods and techniques held at a field location in the western United States, generally California or Nevada. Introduces basic methods of archaeological survey, mapping, and excavation. GE credit: SciEng | SE.—Su. (Su.)
(change in existing course—eff. spring 15)

182. **Archaeometry (4)**
Lecture—3 hours; discussion/laboratory—1 hour. Prerequisite: course 3; Statistics 13 or the equivalent recommended. Scientific techniques used to study the chemical and physical properties of archaeological materials. Types of archaeological questions that can be addressed with different methods. Preparatory and analysis of archaeological materials. May be repeated for credit only if material is unique for that student and with consent of instructor. May be repeated for credit. Offered irregularly.—Darwent, Eerkens
(change in existing course—eff. spring 15)

183. **Laboratory in Archaeological Analysis (4)**
Lecture—2 hours; laboratory—6 hours. Prerequisite: course 181 or consent of instructor. Museum preparation, analysis, and guidance in preparation of museum material for publication. May be repeated for credit with consent of instructor. Limited enrollment. Offered irregularly. GE credit: SciEng, Wrt | QL, QL, SE, WE
(change in existing course—eff. spring 15)

185. **Lithic Analysis (4)**
Lecture/laboratory—4 hours. Basic concepts of lithic analysis. General introduction on the place of stone tool technology in the archaeological record. Physics, terminology and methodological concepts behind the study of stone tools. Review of the development of stone tool technology from its emergence. Offered in alternate years. Offered in alternate years. GE credit: SocSci | SS.—Zwyns
(change in existing course—eff. spring 15)

186A. **Museum Studies: Analysis of Native American Basketry (4)**
Lecture/laboratory—3 hours; discussion/laboratory—1 hour. Class size limited to 25 students. Study of ethnographic and prehistoric basketry from North America, especially California and Oregon, in a multidisciplinary anthropological context. Techniques for basketry attribution and textile analysis. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, OL, VL, WE.—F. (F.) Bettger
(new course—eff. fall 15)

Graduate

200. **History of Anthropology (4)**
Lecture/discussion—2 hours; term paper. Historical development of socio-cultural theory within anthropology, from mid-19th to mid-20th Centuries. Focus on original theory texts in context of historical developments in the field as a whole. Offered in alternate years.
(change in existing course—eff. spring 15)

201. **Critical Readings in Ethnography (4)**
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Critical readings of selected ethnographies that examine a wide range of important topics and analytical issues in social and cultural anthropology. Emphasis on how and why ethnographic writing has changed over time and its relationship with contemporary theoretical explorations.—F. (F.) Zhang
(change in existing course—eff. fall 14)

202. **History and Theory of Biological Anthropology (4)**
Seminar—3 hours; term paper. History of thought in biological anthropology and analysis of major theoretical problems in the field. Suggested for all first year graduate students lacking intensive preparation in biological anthropology.—Weaver
(change in existing course—eff. spring 15)

203. **History and Theory of Anthropology (4)**
Seminar—3 hours; term paper. Generally restricted to graduate students; outstanding undergraduates with extensive training in anthropology with consent of instructor. History of anthropology and archaeological theory and analysis of research of historical anthropology. May be repeated for credit.—F. (F.) Bettger
(change in existing course—eff. spring 15)

217. **Quantitative Modeling in Anthropology (4)**
Lecture/discussion—3 hours; term paper. Examination of the nature of archaeological data with a focus on the quantitative and statistical techniques available to model, analyze, display, and make sense of such data. Offered irregularly.—Darwent, Eerkens
(change in existing course—eff. spring 15)

218. **Topics in New World Prehistory (4)**
Seminar—3 hours; term paper. Advanced study on current problems in New World Prehistory and archaeology. May be repeated for credit only if material is unique for that student and with consent of instructor. May be repeated for credit. Offered irregularly.—Darwent, Eerkens
(change in existing course—eff. spring 15)

219. **Topics in Old World Prehistory (4)**
Seminar—3 hours; term paper. Advanced study on current problems in Old World prehistory and archaeology. May be repeated for credit only if material is unique for that student and with consent of instructor. May be repeated for credit. Offered irregularly.—Steele, Zwyns
(change in existing course—eff. spring 15)

222. **Cities and Citizenship (4)**
Seminar—3 hours; term paper. Prerequisite: graduate standing; consent of instructor. Explores the nature of modern cities, urban socioeconomic life, and urban culture and politics from an anthropological perspective.—F. (F.) Zhang
(change in existing course—eff. fall 14)

250. **Behavioral Ecology of Primates (4)**
Seminar—3 hours; term paper. Prerequisite: course 154A (may be taken concurrently) or the equivalent, graduate standing. Concepts, issues, and hypotheses in primate behavioral ecology, with emphasis on the social and ecological determinants and consequences of variation in social organization for individuals. Offered in alternate years.—Isbell
(change in existing course—eff. spring 15)

252. **Human Evolution Seminar (4)**
Seminar—3 hours; term paper. Prerequisite: course 152 or the equivalent; consent of instructor. Study of selected topics in human evolutionary studies. Each year course will focus on one or more of the following: molecular evolution, primate evolutionary biology, Tertiary hominoids, Homo erectus, archaic Homo sapiens, brain evolution. May be repeated for credit.—S. (S.) Weaver, Zwyns
(change in existing course—eff. spring 15)

253. **Seminar in Human Biology (4)**
Seminar—3 hours; term paper. Prerequisite: course 153, 157, or consent of instructor. Study of selected topics in human biology. May be repeated for credit when topics vary. Offered irregularly.—W. (W.) D. G. Smith
(change in existing course—eff. spring 15)

254. **Current Issues in Primate Socioecology (4)**
Seminar—3 hours; term paper. Prerequisite: course 154B or the equivalent. Analysis of primate behavior, with particular emphasis on preparation for field studies. May be repeated for credit when topic differs.—Crofoot, Isbell
(change in existing course—eff. spring 15)

256. **Primate Conservation Biology (4)**
Seminar—3 hours; term paper. Prerequisite: course 154, graduate standing or upper division undergraduate with consent of instructor. Class size limited to 10 students. Application of understanding of primate biology to conservation of primates and their habitat. Topics include evolutionary anthropology, behavioral ecology, biogeography, macroecology, etc.
population biology, and socio-ecology of primates. May be repeated one or more times for credit if term paper differs. (S/U grading only.) Offered irregularly. (change in existing course—eff. spring 15)

261. Modeling the Evolution of Social Behavior (4)
Lecture—3 hours; extensive problem solving. Prerequisite: Mathematics 16C or the equivalent or consent of instructor. Tools and topics in modeling the evolution of social behavior in humans and other animals. Game theory, basic population genetics, animal conflict, altruism, reciprocity, signaling, and group selection. (change in existing course—eff. spring 15)

262. Evolution and Human Behavior (4)
Discussion—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Exploration of the links between behavioral ecological theory and human cultural variation, focusing on reproduction, marriage, parental investment and family structure; implications of evolutionary theory for social organization in human communities, historical and contemporary. Offered in alternate years.—Borgerhoff, Mulder
(change in existing course—eff. spring 15)

263. Human Applications of Foraging Theory (4)
Discussion—2 hours; laboratory—3 hours. Foraging theory models and their use in ethnographic and archaeological analyses of human behavior, with a focus on hunter-gatherers and resource selection, patch use, population, central places, sharing, stochastic processes, population dynamics, and conservation behavior. Not open for credit to students who have completed course 258. Offered irregularly. (change in existing course—eff. spring 15)

265. Language, Performance, and Power (4)
Seminar—3 hours; term paper. Restricted to graduate standing or consent of instructor. Exploration of the intersection between linguistic and social theories in the language-state relation and the performance of identity. Ideological sources of language differentiation; nation-building and linguistic differences. Political economic, sociolinguistic, and ethnographic approaches to understanding linguistic inequality. Offered in alternate years. (Same course as Linguistics 265.)—Shibamoto-Smith

270. Anthropology Colloquium Seminar (1)
Seminar—1 hour. Reports and discussions of recent advances in the four subfields of anthropology. To be presented by guest speakers. May be repeated two times for credit. (S/U grading only.)—F, W, S. (F, W, S.)

Arabic

New and changed courses in Arabic (ARB)

Lower Division

1. Elementary Arabic 1 (5)
Lecture/discussion—5 hours. Introduction to basic Arabic. Interactive and integrated presentation of listening, speaking, reading, and writing skills, including the alphabet and basic syntax. Focus on standard Arabic with basic skills in spoken Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — F. (F) Hassouna

1A. Accelerated Intensive Elementary Arabic (15)
Lecture/discussion—15 hours. Special 12-week accelerated, intensive summer session course that combines the work of courses ARB 1, 2, and 3. Introduction to Modern Standard Arabic through development of all language skills in a cultural context with emphasis on communicative proficiency. Not open for credit to students who have completed course 1, 2, or 3. Offered irregularly. GE credit: ArtHum | AH, WC. — Su.

2. Elementary Arabic 2 (5)
Lecture/discussion—5 hours. Prerequisite: course 1 or consent of instructor. Continuation of basic Arabic from course 1. Interactive and integrated presentation of listening, speaking, reading, and writing skills, including syntax. Focus on standard Arabic and limited use of spoken Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — W. (W) Hassouna

2A. Elementary Arabic 2A (5)
Lecture/discussion—5 hours. Prerequisite: course 1A or consent of instructor. Continuation of basic Arabic from course 1A. Interactive and integrated presentation of listening, speaking, reading, and writing skills, including syntax. Focus on standard Arabic and limited use of spoken Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — F. (F) Hassouna

3. Elementary Arabic 3 (5)
Lecture/discussion—5 hours. Prerequisite: course 2 or consent of instructor. Continuation of introduction to basic Arabic from courses 1 and 2. Interactive and integrated presentation of listening, speaking, reading, and writing skills, including idiomatic expression. Focus on standard Arabic with limited use of Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — S. (S) Hassouna

21. Intermediate Arabic 21 (5)
Lecture/discussion—5 hours. Prerequisite: course 3 or consent of instructor. Builds on courses 1, 2, and 3. Interactive and integrated presentation of listening, speaking, reading, and writing skills, including idiomatic expression. Focus on standard Arabic with limited use of Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — F. (F) Hassouna

22. Intermediate Arabic 22 (5)
Lecture/discussion—5 hours. Prerequisite: course 21 or consent of instructor. Continuation of course 21. Continuation of interactive and integrated presentation of listening, speaking, reading, and writing skills, including idiomatic expression. Focus on standard Arabic with limited use of Egyptian and/or one other colloquial dialect. GE credit: ArtHum | AH, WC. — W. (W) Hassouna

23. Intermediate Arabic 23 (5)
Lecture/discussion—5 hours. Prerequisite: course 22 or consent of instructor. Continuation of courses 21 and 22. Interactive and integrated presentation
of Arabic listening, speaking, reading, and writing skills, including idiomatic expression. GE credit: ArtHum | AH, WC. — S (S.) Housouma (change in existing course—eff. spring 16)

Upper Division

101A. Readings in Arabic: 600-1850 (4)
Discussion—3 hours; extensive writing. Prerequisite: course 123 or consent of instructor. Readings in Arabic. Poetry, prose literature, and selections from texts on religion, history, politics, science, philosophy and mysticism. Students can repeat the course one time if the instructor decides that they would benefit from additional practice working on the different selections from the same texts or if 50% or more of the texts are different. GE credit: ArtHum or SocSci, Div, Wrt, AH or SS, VL, WC. — Radwan, Sharlet (change in existing course—eff. spring 16)

121. Advanced Arabic (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 23 or consent of instructor. Review, refinement, and development of skills learned in intermediate Arabic through work with texts, video, and audio on cultural and social issues. Integrated approach to reading, writing, listening, speaking primarily standard Arabic, with limited use of one colloquial dialect. May be repeated twice for credit based on different readings. GE credit: ArtHum | AH, WC. — F. (F) Radwan, Sharlet (change in existing course—eff. spring 15)

140. A Story for a Life: The Arabian Nights (4)
Lecture/discussion—3 hours; term paper. In-depth exploration of The Arabian Nights, the best-known work of pre-modern Arabic literature and a major work of world literature. Analysis of the work in its historical context and in comparison to other frame tales in world literature. (Same course as Comparativa Literature 172 and Middle East/South Asia Studies 121C.) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WC, WE. — Radwan, Sharlet (change in existing course—eff. winter 16)

141. Readings in Modern Arabic Literature (4)
Lecture/discussion—2 hours; extensive writing. Prerequisite: course 123 or consent of instructor. Readings of modern Arabic poetry and fiction in original format, assisted by instructor-prepared glossaries and other supplementary material. Readings to be followed by class discussion and short writing assignments in Arabic. Open to students at advanced proficiency in Arabic. May be repeated one time for credit if reading material changes. GE credit: ArtHum | AH, WC. — F. (F) Radwan, Sharlet (change in existing course—eff. spring 15)

Graduate

299. Individual Study (1-12)
Prerequisite: graduate standing; consent of instructor. Restricted to graduate students. May be repeated for credit. (S/U grading only)— F, W, S. (F, W, S.) (change in existing course—eff. fall 14)

297. Directed Independent Study (4)
Discussion—1 hour; independent study. Prerequisite: graduate standing or consent of instructor. Restricted to graduate students. Directed Independent Study on a topic culminating in a term paper. Independent Study may only be arranged with consent of the instructor when graduate seminars are unavailable. Topic may be arranged by instructor. May be repeated five times for credit when no graduate seminars are available and topic differs. — F, W, S. (F, W, S.) Radwan, Sharlet (change in existing course—eff. fall 15)

Professional

396. Teaching Assistant Training Practicum (1-4)
Prerequisite: graduate standing; consent of instructor. Restricted to graduate students. May be repeated 18 times for credit. (S/U grading only)— F, W, S. (F, W, S.) (change in existing course—eff. fall 14)

Art History

New and changed courses in Art History (AH)

Lower Division

1C. Baroque to Modern Art (4)
Lecture—3 hours; discussion—1 hour. Introduction to visual analysis through study of western art 1600-present, examining major artists and movements from Europe to North America. Study of the relationship of art and artists to political, religious, social change, and to changes in ideology, patronage, audience. May be repeated for credit. GE credit: ArtHum, Div | AH, VL, WC. — S. (S.) Strazdes (change in existing course—eff. winter 16)

1D. Arts of Asia (4)
Lecture—3 hours; discussion—1 hour. Introduction to major forms and trends in the arts, architecture, and material culture of Asia from the Neolithic to the contemporary emphasizing the visual manifestation of secular and religious ideas and ideals. Not open for credit to students who have completed course 1DV. GE credit: ArtHum, Div | AH, VL, WC. — W. (W.) Burnett (change in existing course—eff. winter 15)

1E. Islamic Art and Architecture (4)
Lecture—3 hours; discussion—1 hour. Introduction to the art and architecture of the Islamic world including the Middle East, Africa, Europe, and South Asia, from the 7th century CE to the 20th. Offered in alternate years. GE credit: ArtHum, Div | AH, VL, WC. — F. (F) Watenpaugh (change in existing course—eff. spring 15)

5. Understanding Visual Culture (4)
Lecture/discussion—3 hours; discussion—1 hour. Development of visual literacy for an increasingly visual world; critical analyses focusing on the widest variety of visual imagery: the fine arts across media and eras of world culture, television, film, and advertising. Intended for a diverse spectrum of audiences. GE credit: ArtHum | AH, VL, WC.— F. (F) Watenpaugh (change in existing course—eff. spring 15)

10. Twenty Monuments (4)
Lecture/discussion—3 hours; term paper. Development of urban form and organization of space; technological problems of construction, visual qualities of architecture, and social issues connected to architecture. GE credit: ArtHum | AH, DD, VL, WC.— S. (S.) Watenpaugh (change in existing course—eff. spring 15)

12. Arts of Subsaharan Africa (4)
Lecture—3 hours; term paper. Prerequisite: Art Studio 5 or 7 recommended. Study of forms and symbols of historic and contemporary masterpieces. (Same course as Art Studio 148.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE.— II, III (II, III.) Pardoe (change in existing course—eff. spring 15)

150. Arts of Subsaharan Africa (4)
Lecture/discussion—3 hours; term paper. Traditional arts and crafts of subsaharan Africa from prehistoric times to the present; the relationships among art, nature, cycles of life, and religion; art as expression of power; sculpture and culture in West and Central Africa; Colonialism and collecting. Offered irregularly. GE credit: ArtHum, Div | AH, VL, WC.— II, III (II, III.) Watenpaugh (change in existing course—eff. winter 15)

151. Arts of the Indians of the Americas (4)
Lecture/discussion—3 hours; term paper. Development of art in North America, emphasizing ancient Mexico. South American relationships and parallels. Recent and contemporary Indian arts and crafts from Alaska to Chile. Offered irregularly. GE credit: ArtHum, Div | AH, VL, WE.— S, Su. (S, Su.) (change in existing course—eff. spring 15)

155. The Islamic City (4)
Lecture—3 hours; term paper. Prerequisite: course 1E recommended. Introduction to the urban history of the Islamic world. Includes critical study of the historiography of the Islamic city. development of urban form, institutions and rituals, and analysis of selected themes. GE credit: ArtHum, Div, Wrt | AH, VL, WE.— W. (W.) Watenpaugh (change in existing course—eff. spring 15)

156. Arts of the Islamic Book (4)
Lecture—3 hours; term paper. Prerequisite: prior completion of course 1E recommended. Critical study of the arts of the luxury book in the pre-modern Islamic world. Representation in Islam, the relationship of word and image, the discipline of calligraphy, aesthetics and representation in Persian painting. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC.— W. (W.) Watenpaugh (change in existing course—eff. spring 16)
163A. Chinese Art (4) Lecture/discussion—4 hours. Thematic and chrono-
logically organized survey of Chinese art and culture from Neolithic through Tang Dynasty (10th c. CE). Study of ceremonial and secular objects manifesting folk beliefs and belief systems of ancestors, worship. Buddhism, Daoism, and Confu-
cianism. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—W (W. ) Burnett
(change in existing course—eff. spring 15)

163B. Chinese Painting (4) Lecture/discussion—4 hours. Thematic and chrono-
logically organized survey of Chinese painting and culture from the Tang Dynasty (7th c. CE) through the early 20th century. Topics considered include political art (made to support or resist regimes), art and the market, art and individual expression. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—W (W. ) Burnett
(change in existing course—eff. spring 15)

163C. Early Modern Chinese Painting (4) Lecture/discussion—4 hours. Topics in Chinese Art History, 13th-19th century. Study of issues pertaining to self-aggrandizement, political dynamics, ideas of order and stability, social and economic changes in China’s history, and the transformation of Chinese art in the context of modernization. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—S (S) Burnett
(change in existing course—eff. spring 15)

163D. Art from China to the Present (4) Lecture/discussion—4 hours. Prerequisite: course 163B or consent of instructor. Modern and avant-garde expression from China’s industrialization to the 21st century. Interactions of art and poli-
tics, individual and state, art for the free market versus art for the state, expressions of modernity; China on the world stage. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—W (W. ) Burnett
(change in existing course—eff. spring 15)

164. The Arts of Japan (4) Lecture/discussion—3 hours; term paper. Japan’s painting, architecture, decorative arts, and print her-
lage, ancient times to the 20th century in literary, political, intellectual, and spiritual contexts; impact of Japanese art on the West and the West’s transfor-
mative impact upon Japan’s opening in the 19th cen-
tury. GE credit: ArtHum, Div, Wrt | AH, VL, WC.—Su. (Su.)
(change in existing course—eff. winter 16)

168. Great Cities (4) Lecture—3 hours; term paper. Transformation in architecture and urban form in Paris, London, and Vienna in the context of varying social, political, and economic systems as well as very different cultural traditions, concentrating on the years 1830-1914. Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE.—Sadler
(change in existing course—eff. spring 15)

172A. Early Greek Art and Architecture (4) Lecture—3 hours; term paper. Examination of the origin and development of the major monuments of Greek art and architecture from the eighth century to the mid-fifth century B.C. (Same course as Classics 172A.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE.—W (W. ) Roller
(change in existing course—eff. spring 15)

172B. Later Greek Art and Architecture (4) Lecture—3 hours; term paper. Study of the art and architecture of later Classical and Hellenistic Greece, from the mid-fifth century to the first century B.C. (Same course as Classics 172B.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL—W (W. ) Roller
(change in existing course—eff. spring 15)

173. Roman Art and Architecture (4) Lecture—3 hours; term paper. Art and architecture of Rome and the Roman Empire, from the founding of Rome through the fourth century C.E. (Same course as Classics 173.) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WE.—S (S) Roller
(change in existing course—eff. spring 15)

175. Architecture and Urbanism in Mediterranean Antiquity (4) Lecture—3 hours; extensive writing. Prerequisite: a lower division Classics course (except 30, 31); course 1A recommended. Architecture and urban development in the ancient Near East, Greece, and Rome. Special emphasis on the social structure of the ancient city as expressed in its architecture, and on the interaction between local traditions and the impact of Greek-Roman urbanism. (Same course as Classics 175.) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—W (W. ) Burnett
(change in existing course—eff. spring 15)

177. Northern Renaissance Art (4) Lecture/discussion—3 hours; term paper. Artistic cul-
ture of the Northern Renaissance c. 1250-1500. Topics include the development of “realism” in port-
traiture and landscapes, prints and print culture, urbanism, science, and the eclectic, anti-religious arts, religious art and its role in church architecture, trade, and nunneries. Offered irregularly. GE credit: ArtHum | AH, VL, WC, WE.—W, S (W, S.)
(change in existing course—eff. spring 15)

177A. Northern European Art (4) cancelled course—eff. fall 15

177B. Northern European Art (4) cancelled course—eff. fall 15

178A. Early Italian Renaissance Art and Architecture (4) Lecture—3 hours; term paper. Fifteenth-century art-
ists, with a focus on Florence, Donatello and Masac-
tchio through Botticelli, in their artistic, architectural, and cultural setting; the impact of Humanism and the rebirth of classical learning. GE credit: ArtHum, Wrt | AH, VL, WE.—S (S.)
(change in existing course—eff. fall 14)

178B. High and Late Italian Renaissance Art and Architecture (4) Lecture—3 hours; term paper. High Renaissance and Mannerism in 16th-century Italy: Leonardo, Michel-
angelo, Raphael, and Titian in their artistic and cul-
tural settings—Florence, Rome, and Venice; the architecture of Bramante, Michelangelo, and Palla-
dia. GE credit: ArtHum, Div, Wrt | AH, VL, WE.—S (S.)
(change in existing course—eff. spring 15)

179B. Baroque Art (4) Lecture—3 hours; term paper. Seventeenth-century painting, sculpture and graphic arts, including such artists as Caravaggio, Rubens, Rembrandt, and Velázquez in their political and social context. GE credit: ArtHum, Wrt | AH, VL, WE.—W (W.)
(change in existing course—eff. spring 15)

182. British Art and Culture, 1750-1900 (4) Lecture—3 hours; term paper. British painting in rela-
tion to the position of women in society and the rise of the middle-class art market. Topics include Haga-
rith and popular culture, Queen Victoria and the female gaze, and Pre-Raphaelite artists and collec-
tors. GE credit: ArtHum, Wrt | AH, VL, WC, WE.—Su. (Su.)
(change in existing course—eff. spring 16)

183A. Art in the Age of Revolution, 1750-1850 (4) Lecture—3 hours; term paper. Prerequisite: prior completion of course 1C recommended. European revolutions, revolutions in thinking, changes in daily life from Colonial times to the 1960s. Vernacular developments, effects of different socioeconomic conditions, and women’s role in

183C. Modernism in France, 1880-1940 (4) Lecture—3 hours; term paper. Development of modern-
art in France, its social context, and its transna-
tional aspects. Post-Impressionism, Cubism, Expressionism, and Surrealism are considered in relation to secessionist movements, the formation of other artistic groups, new forms of patronage, and new audiences. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—W (W. )
(change in existing course—eff. spring 15)

184. Twentieth Century Architecture (4) Lecture—3 hours; term paper. Prerequisite: prior completion of course 25 recommended. Major movements in architecture of the twentieth century in Europe and America. Formal innovations are exam-
ined within the social, political, and economic cir-
cumstances in which they emerged. GE credit: ArtHum, Wrt | AH, VL, WE.—W (W.)
(change in existing course—eff. spring 16)

185. Avant-Gardism and its Aftermath, 1917-1960 (4) Lecture/discussion—4 hours. Social, cultural, aes-
thetic, and theoretical development for artists and their audiences in the context of larger issues like the Mexican, Russian and German revolutions, WWII, the Depression, WWII, etc., and a critical-theoretical inquiry into questions of modernity, identity, and avant-gardism. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WE.—Su. (Su.) Stimson
(change in existing course—eff. spring 16)

186. Contemporary Art 1960-Present (4) Lecture/discussion—4 hours; term paper. Develop-
ment of new media and aesthetics in the context of such cultural and political phenomena as the New Left, feminism, and globalization; investigation of the critical-theoretical questions of neo avant-gardism, postmodernism, and postmodernity. GE credit: ArtHum, Div, Wrt | ACGH, AH, VL, WE.—S (S.)
(change in existing course—eff. fall 14)

187. Contemporary Architecture (4) Lecture—3 hours; term paper. Prerequisite: prior completion of course 25 and/or course 184 recommended. Introduction to world architecture and urban design since circa 1966. Relation of influen-
tial styles, buildings, and architects to modern issues and environmental change. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WE.—W (W. )
(change in existing course—eff. winter 16)

188A. The American Home (4) Lecture/discussion—4 hours; term paper. American domestic architecture and domestic aesthetics in its changes in daily life from Colonial times to

---

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div—Domestic Diversity; Wrt—Writing Experience

ACGH—American Cultures; DD—Domestic Diversity; OL—Oriental Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience

Quarter Offered: F—Fall; W—Winter; S—Spring; Su—Summer; 2015-2016 offering in parentheses
shaping the home receive special attention. GE credit: ArtHum, Div, Wrt | ACGH, AH, DD, VL, WE.—W, W/F. Strazdes

18BC. American Art to 1910 (4)
Lecture/discussion—4 hours; term paper. Major movements in American art from the 17th-century English speaking colonies to the onset of World War I. Offered in alternate years. GE credit: ArtHum | ACGH, AH, VL, WE.—F, W, S. Strazdes

188D. American Painting and Sculpture to the Civil War (4)
(canceled course—eff. fall 15)

189. Photography in History (4)
Lecture/discussion—4 hours. Social, cultural, aesthetic and technical developments in the history of photography including patronage and reception, commercial, scientific, political and artistic applications, and a critical-theoretical inquiry into photography’s impact on the social category “art” and the history of subjectivity. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL—S. (S.)

190A. Undergraduate Seminar in Art History: Mediterranean Antiquity (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190B. Undergraduate Seminar in Art History: Medieval (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190C. Undergraduate Seminar in Art History: Renaissance (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190D. Undergraduate Seminar in Art History (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190E. Undergraduate Seminar in Art History: Gendering of Culture (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190F. Undergraduate Seminar in Art History: Chinese (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190G. Undergraduate Seminar in Art History: Japanese (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190H. Undergraduate Seminar in Art History: Modern-Contemporary (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190I. Undergraduate Seminar in Art History: 17th-18th Century (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190J. Undergraduate Seminar in Art History: Islamic (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190K. Undergraduate Seminar in Art History: 19th Century (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

190L. Undergraduate Seminar in Art History: Architecture & Heritage (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Art History major, minor, or other significant training in Art History recommended. Class size limited to 25 students; for majors, minors, other advanced students. Study of a broad problem or the theoretical issue in art, architecture, or material culture. Intensive reading, discussion, research, writing. GE credit: ArtHum | AH, OL, VL, WE.—F, W, S. (F, W, S.)

Graduate

200C. Thesis Writing Colloquium (1)
Discussion—1.5 hour; autotutored. Prerequisite: course 200B, taken by all Art History M.A. students in their first year. Restricted to graduate students in Art History. Meeting concurrently with course 200B, the colloquium provides a structured, supportive environment for second-year Art History graduate students drafting masters’ theses. Offers a forum for technical discussions, discussion of writing/editing procedures, and peer review of writing in progress. (S/U grading only.)—W (W.) Burnett, Strazdes

210. Museums, Art Exhibitions and Culture (4)
Seminar—3 hours; extensive writing or discussion; term paper. Prerequisite: graduate status in art history or an allied field. Class size limited to 20 students. Issues accompanying the evolution and function of museums from cabinets of curiosities in sixteenth-century Europe to modern art centers. Examination of divergent motives behind collecting, exhibiting, and interpretation of objects. Investigation of museums’ historical legacies and continuing philosophical dilemmas. Offered in alternate years. GE credit: ArtHum, Wrt.—F, W, S. Strazdes

251. Seminar in Tribal Arts (4)
(canceled course—eff. winter 15)

278. Seminar in Italian Renaissance Art (4)
Seminar—3 hours; term paper. Selected areas of special study in Italian art from the fourteenth to the sixteenth century. May be repeated for credit with consent of instructor. Offered in alternate years.—S. (change in existing course—eff. winter 15)

292. Internship (1-4)
Internship—3-12 hours. Prerequisite: graduate student; consent of instructor. Restricted to graduate students in Art History only. Supervised internship at professional art or cultural institution including museums, galleries, archives, government offices, visual resources libraries, etc. May be repeated up to eight units for credit. Offered irregularly. (S/U grading only.)—F, W, S. (F, W, S.)

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum 2014-2016 General Catalog Course Supplement and Policies and Requirements Addendum
Art Studio

New and changed courses in Art Studio (ART)

Lower Division

2. Beginning Drawing (4)
Studio—6 hours. Introduction to drawing using various black and white media to articulate forms and organize space, with reference to historical and contemporary works. GE credit: ArtHum | AH, VL — F, W, S, Su; (F, W, S, Su) Pardee, PulS, Werfel

[change in existing course—eff. spring 15]

5. Beginning Sculpture (4)
Studio—6 hours. Basic sculpture techniques using a variety of media. Form in space using cardboard, plaster, and/or cement, wood and/or metal and other media. GE credit: ArtHum | AH, VL — F, W, S; (F, W, S) Bills, Hill, PulS

[change in existing course—eff. winter 15]

7. Beginning Painting (4)
Studio—6 hours. Introduction to techniques and concepts in the practice of painting. — F, W, S; (F, W, S) Pardee, Werfel

[change in existing course—eff. spring 15]

8. Beginning Ceramic Sculpture (4)
Studio—6 hours. Introduction to ceramic sculpture construction and processes. GE credit: ArtHum | AH, VL — Rosen

[change in existing course—eff. winter 15]

9. Beginning Photography (4)
Studio—6 hours. Introduction to the fundamental technical, aesthetic, and formal aspects of photography. Camera skills, film developing and printing in the black and white darkroom. GE credit: ArtHum | AH, VL — Hyde, Suh

[change in existing course—eff. spring 15]

11. Beginning Printmaking (4)
Studio—6 hours. Introduction to printmaking techniques such as monotype, relief, and intaglio. Investigation of personal imagery through use of these techniques. GE credit: ArtHum | AH, VL

[change in existing course—eff. winter 15]

12. Beginning Video (4)
Studio—6 hours. Production techniques of video shooting, editing, lighting, sound and effects. A conceptual framework for video-art techniques. GE credit: ArtHum | AH, VL — Martin

[change in existing course—eff. winter 15]

30. Introduction to Contemporary Visual Culture (4)
Lecture—3 hours; discussion/laboratory—1 hour. Establishing visual literacy across the media of fine art, photography, advertising, television and film; media culture; focus on critical decoding of contemporary visual culture. Offered in alternate years. GE credit: ArtHum, Div. Wirt | AH, VL — F, W, F, W, W) Pardee

[change in existing course—eff. spring 15]

Upper Division

101. Intermediate Painting (4)
Studio—6 hours. Prerequisite: courses 2, 7. Individualized projects exploring color and space in a variety of subject matter and approaches. Builds on basic skills and concepts from beginning drawing and painting courses. Study of historical and contemporary art in relation to studio practice. May be repeated one time for credit when topic differs. GE credit: ArtHum | AH, VL — F, W, S; (F, W, S) Pardee, Werfel

[change in existing course—eff. winter 16]

102A. Advanced Painting: Studio Projects (4)
Studio—6 hours. Prerequisite: course 101. Pass One restricted to Art Studio majors. Sustained development of painting for advanced students. Approaches will vary according to the instructor. May be repeated for credits. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

102B. Advanced Painting: Figure (4)
Studio—6 hours. Prerequisite: course 101. Pass One restricted to Art Studio majors. Advanced painting using the human figure as subject. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

102C. Advanced Painting: Special Topics (4)
Studio—6 hours. Prerequisite: courses 2, 7, 101; course 102A or 102B. Pass One restricted to Art Studio majors. Special topics in painting for upper division students. Emphasis on development of a personal practice of painting informed by awareness of contemporary issues in painting and their historical background. Topics will vary with instructor. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

103A. Intermediate Drawing: Black and White (4)
Studio—6 hours. Prerequisite: courses 2; course Pass One restricted to Art Studio majors. Advanced study of drawing composition using black and white media. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

103B. Intermediate Drawing: Color (4)
Studio—6 hours. Prerequisite: courses 2. Pass One restricted to Art Studio majors. Study of drawing composition in color media. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

105A. Advanced Drawing: Studio Projects (4)
Studio—6 hours. Prerequisite: courses 2; course 103A or 103B. Pass One restricted to Art Studio majors. Exploration of composition and process in drawing. Emphasis on the role of drawing in contemporary art and interdisciplinary practice. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

105B. Advanced Drawing: Figure (4)
Studio—6 hours. Prerequisite: courses 2; course 103A or 103B. Pass One restricted to Art Studio majors. Study of the figure through drawing of the model. Emphasis on the process of figure-drawing. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Pardee, Werfel

[change in existing course—eff. fall 14]

110A. Intermediate Photography: Black and White Analog (4)
Studio—6 hours. Prerequisite: course 9. Pass One restricted to Art Studio majors. Introduction to 35mm and medium format camera. Development of personal aesthetic and portfolio of black and white prints. GE credit: ArtHum | AH, VL — Hyde, Suh

[change in existing course—eff. spring 15]

110B. Intermediate Photography: Digital Imaging (4)
Studio—6 hours. Prerequisite: course 9. Pass One restricted to Art Studio majors. Comprehensive introduction to all elements of digital photography, including scanning, imaging software and printing. GE credit: ArtHum | AH, VL — Hyde, Suh

[change in existing course—eff. spring 15]

111A. Advanced Photography: Special Topics (4)
Studio—6 hours. Prerequisite: courses 9 and 110A. Pass One restricted to Art Studio majors. Special topics related to photography and contemporary art practice. Multiple projects in a variety of approaches. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, VL — Hyde, Suh

[change in existing course—eff. spring 15]

111B. Advanced Photography: Digital Imaging (4)
Studio—6 hours. Prerequisite: course 9 and 110B. Pass One restricted to Art Studio majors. In-depth exploration of digital photography, including refined digital imaging techniques. Theoretical issues involved in digital media. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Hyde, Suh

[change in existing course—eff. spring 15]

112. Sound for Vision (4)
Studio—6 hours. Prerequisite: course 12 or Techno-cultural Studies 100. Pass One restricted to Art Studio majors. Sound composition and development of an audio databank. Study of repetition and phase shifts. Creation of descriptive acoustic space recordings in combination with other artistic media. Audio as stand alone or accompaniment. May be repeated for credit one time. GE credit: ArtHum | AH — Martin

[change in existing course—eff. fall 14]

114A. Intermediate Video: Animation (4)
Studio—6 hours. Prerequisite: course 12 or Techno-cultural Studies 100; one drawing course. Pass One restricted to Art Studio majors. Exploration of animation. Relationship between drawing, digital stills, and multiple images. Animation using traditional drawing techniques, collage, and digital processes. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Martin

[change in existing course—eff. fall 14]

114B. Intermediate Video: Experimental Documentary (4)
Studio—6 hours. Prerequisite: course 12 or Techno-cultural Studies 100. Pass One restricted to Art Studio majors. Experimental documentary practice. Use of interviews, voice-overs, and still and moving images. Production of alternative conceptual and visual projects. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Martin

[change in existing course—eff. fall 14]

114C. Intermediate Video: Performance Strategies (4)
Studio—6 hours. Prerequisite: course 12 or Techno-cultural Studies 100. Pass One restricted to Art Studio majors. Use of video to expand performance art production. Exploration of improvisation, direction, projection, and image processing in real time. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Martin

[change in existing course—eff. fall 14]

117. Advanced Video and Electronic Arts (4)
Studio—6 hours. Prerequisite: course 12 or Techno-cultural Studies 100; one of the following: course 111A, 111B, or 114C; upper division standing Art Studio majors. Pass One restricted to Art Studio majors. Independently driven video, digital, and/or performance projects. Further development in the electronic arts ranging from video installation to performance. May be repeated for credit one time. GE credit: ArtHum | AH, VL — Martin

[change in existing course—eff. fall 14]

121. Reinterpreting Landscape (4)
Studio—6 hours. Prerequisite: courses 2, 7. Pass One restricted to Art Studio majors. Interpretation of landscape through painting, drawing, and related
media. Emphasis on the integration of historical, cultural, natural, and artistic contexts. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Pardoe, Werfel
(change in existing course—eff. fall 14)

125A. Intermediate Printmaking: Relief (4)
Studio—6 hours. Prerequisite: course 11. Pass One restricted to Art Studio majors. Woodcut linocut, metal-plate, relief, and experimental uses of other materials for printmaking. Additive and subtractive relief techniques. May be repeated for credit one time. GE credit: ArtHum | AH, VL
(change in existing course—eff. fall 14)

125B. Intermediate Printmaking: Intaglio (4)
Studio—6 hours. Prerequisite: course 11. Pass One restricted to Art Studio majors. Metal plate etching, aquatint, hard and soft ground, burin engraving and related printmaking techniques. May be repeated for credit one time. GE credit: ArtHum | AH, VL
(change in existing course—eff. spring 15)

125C. Intermediate Printmaking: Lithography (4)
Studio—6 hours. Prerequisite: course 11. Pass One restricted to Art Studio majors. Stone and metal-plate lithography and other planographic printmaking methods. Exploration of the basic chemistry and printing processes inherent in stone lithography. May be repeated for credit one time. GE credit: ArtHum | AH, VL
(change in existing course—eff. spring 15)

129. Advanced Printmaking (4)
Studio—6 hours. Prerequisite: course 8; 142A or 142B. Pass One restricted to Art Studio majors. Techniques of enlargement and miniaturization. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Suh
(change in existing course—eff. fall 14)

142A. Intermediate Ceramic Sculpture: Clay, Glaze, and Kiln (4)
Studio—6 hours. Prerequisite: course 8. Pass One restricted to Art Studio majors. Study and practice of glaze formation. Concentration on the use of color in ceramic sculpture. Practical experience with kiln firing. May be repeated one time for credit. GE credit: ArtHum | AH, VL—Rosen
(change in existing course—eff. fall 14)

142C. Intermediate Ceramic Sculpture: Issues in Contemporary Ceramics (4)
Studio—6 hours. Prerequisite: course 8. Pass One restricted to Art Studio majors. Individual studio work in conjunction with readings, field trips, critiques and writing about contemporary ceramic art. May be repeated one time for credit. GE credit: ArtHum | AH, VL—Rosen
(new course—eff. fall 14)

143A. Advanced Ceramic Sculpture: Studio Projects (4)
Studio—6 hours. Prerequisite: course 8; 142A or 142B. Pass One restricted to Art Studio majors. Exploration of ceramic fabrication. Hollow and solid building, casting, throwing, using fired, found, and fabricated ceramic elements. May be repeated for credit two times. GE credit: ArtHum | AH, VL—Rosen
(change in existing course—eff. fall 14)

143B. Advanced Ceramic Sculpture: Issues in Contemporary Ceramics (4)
Studio—6 hours. Prerequisite: course 8; 142A or 142B. Pass One restricted to Art Studio majors. Individual studio work in conjunction with readings, field trips, critiques and writing about contemporary ceramic art. May be repeated for credit two times. GE credit: ArtHum | AH, VL—Rosen
(change in existing course—eff. fall 14)

147. Theory and Criticism of Photography (4)
Lecture—3 hours; term paper. Prerequisite: course 9. Development of camera vision, ideas, and aesthetics and their relationship to the fine arts from 1839 to the present. Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL—Suh
(change in existing course—eff. spring 15)

148. Theory and Criticism: Painting and Sculpture (4)
Lecture—3 hours; term paper. Prerequisite: course 5 or 7 recommended. Study of forms and symbols in historic and contemporary masterpieces. (Same course as Art History 148.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE—Pardoe
(change in existing course—eff. spring 15)

149. Introduction to Critical Theory (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: two of Art History 1B, 1C, or 183F. An overview of 20th century critical theories of culture and their relation to visual art and culture. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WE—Pardee
(change in existing course—eff. spring 15)

150. Theory and Criticism of Electronic Media (4)
Lecture—3 hours; term paper. Prerequisite: course 24 recommended. Study of electronic media, focusing on critique, application, and relationship to art practice. Analysis of the conceptual basis of electronic media as an artistic mode of expression. Offered in alternate years. GE credit: ArtHum, Wrt | AH—Martin
(change in existing course—eff. spring 15)

152A. Advanced Sculpture: Studio Projects (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Sculpture for advanced students. Emphasis on concept, idea development and honing technical skills. Approaches and projects will vary according to the instructor. May be repeated for credit one time when topic differs. GE credit: ArtHum | AH, VL—Bills, Hill, Puls
(change in existing course—eff. fall 14)

152B. Advanced Sculpture: Material Explorations (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Primary application and exploration of a single sculpture material chosen by the student. Examination of its properties, qualities, and characteristics for three-dimensional expression. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Puls
(change in existing course—eff. fall 14)

152C. Advanced Sculpture: Concepts (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Technical aspects of the use of metals in contemporary art practice. Projects assigned to demonstrate the evolution of concepts and processes. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Puls
(change in existing course—eff. fall 14)

152D. Advanced Sculpture: Metals (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Technical aspects of the use of metals in contemporary art practice. Projects assigned to demonstrate the evolution of concepts and processes. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Bills
(change in existing course—eff. fall 14)

152E. Advanced Sculpture: Site Specific Public Sculpture (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Place and site specificity in contemporary sculpture. Individual and group work to conceive and fabricate sculpture in a public space. May be repeated for credit one time. GE credit: ArtHum | AH, VL—Hill
(change in existing course—eff. fall 14)

152F. Advanced Sculpture: Figure (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Exploration of historical and contemporary approaches to the body in three-dimensions. Projects based on observational and conceptual strategies. Variety of media and techniques, including clay, wax, plaster, plastics, found objects, and other materials. May be repeated for credit one time. GE credit: ArtHum | AH, VL
(change in existing course—eff. fall 14)

152G. Advanced Sculpture: The Miniature and Gigantic (4)
Studio—6 hours. Prerequisite: course 5; 151. Pass One restricted to Art Studio majors. Exploration of scale from the very small to the very large in a series of projects in a variety of media. Tools and techniques of enlargement and miniaturization. May be repeated for credit one time. GE credit: ArtHum | AH, VL
(change in existing course—eff. fall 14)

171. Mexican and Chicano Mural Workshop (4)
Studio—8 hours; independent study—1 hour. Prerequisite: Chicano/a Studies 70; consent or instructor. The Mural: a collective art process that empowers students and people through design and execution of mural painting in the tradition of the Mexican Mural Movement; introduces materials and techniques. May be repeated one time for credit. (Same course as Chicano/a Studies 171.) GE credit: ArtHum | AH, VL—S. (S.)
(change in existing course—eff. spring 15)

190. Seminar in Art Practice (4)
Studio—6 hours. Prerequisite: upper division standing in Art Studio major. Pass One restricted to Art Studio majors. Introduction to professional practices. Development of an artist's packet including a...
Asian American Studies

New and changed courses in Asian American Studies (ASA)

Lower Division

102. Theoretical Perspective in Asian American Studies (4)
Lecture/discussion—4 hours. Prerequisite: course 1, 2, 3, or 4 or consent of instructor; upper division standing. Explores major theories of race and its intersections with class, gender, and sexuality from interdisciplinary perspective. Introduces key theoretical developments, issues, debates. Through case studies, various theoretical frameworks and perspectives have been incorporated into range of scholarship. GE credit: SocSci, Div. — F, Su. [F. Su.] Ho, Kim, Valverde

189A. Topics in Asian American Studies: History (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3, and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; history. May be repeated for credit when topic differs. Offered irregularly. GE credit: SocSci | ACGH, DD, SS, WE.

189B. Topics in Asian American Studies: Culture (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3, and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; culture. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS.

189C. Topics in Asian American Studies: Physical and Mental Health (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3, and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; health. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS.

189D. Topics in Asian American Studies: Policy and Community (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3, and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; policy and community. May be repeated for credit when topic differs. Offered irregularly. GE credit: SocSci | ACGH, DD, SS.

189E. Topics in Asian American Studies: Comparative Racial Studies (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; comparative race studies. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, OL, WE.

189F. Topics in Asian American Studies: Asian Studies and Asian American Studies (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies: Asian and Asian American studies. May be repeated for credit when topic differs. Offered irregularly. GE credit: SocSci | SS.

189G. Topics in Asian American Studies: Race, Class, Gender, and Sexuality (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies: race, class, gender, and sexuality. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS.

189H. Topics in Asian American Studies: Society and Institutions (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies; society and institutions. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, OL, WE.

189I. Topics in Asian American Studies: Politics and Social Movements (4)
Lecture—4 hours. Prerequisite: course 1, 2, 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies: politics and social movements. May be repeated for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, OL, WE.

194. Asian American Studies Capstone Course (4)
Lecture/discussion—4 hours; project, extensive writing. Prerequisite: course 101, minimum major GPA of 3.500 and 3.000 overall, or consent of instructor. Open to senior level standing (4) Asian American Studies. Synthesis of the approaches and methods learned by students in Asian American Studies and development of specialization in their areas of interest. Development of a research proposal for thesis project. — F, W, S. [F, W, S.]

195. Asian American Studies Senior Thesis Seminar (4)
Lecture/discussion—3 hours; project, extensive writing. Prerequisite: course 101. Restricted to senior level standing in Asian American Studies. Synthesis of the approaches and methods learned in Asian American Studies. Production of an original research paper on a topic of student’s interest, building on the research proposal submitted in the capstone seminar. — F, W. [F, W.]

Atmospheric Science

New and changed courses in Atmospheric Science (ATM)

Lower Division

10. Severe and Unusual Weather (3)
Lecture—2 hours discussion—1 hour. Prerequisite: high school physics. Introduction to physical principles of severe and unusual weather: flood, blizzards, thunderstorms, lightning, tornadoes, and hurricanes. Emphasis on scientific perspective and human context. Not open to students who have received credit for course 100. [Former course 100.]

115. Hydroclimatology (3)
Lecture—3 hours. Prerequisite: course 60. Examination of climate as the forcing function for the hydrologic system. Emphasis on seasonal variations in the relationship between precipitation and evapotranspiration for meso-scale areas. Watershed modeling of floods and drought for evaluating the effects of climatic fluctuations. Offered irregularly. GE credit: SciEng | SE, SL, S.—F. [W, F, W.]

116. Climate Change (4)
Lecture—3 hours, extensive writing. Prerequisite: University Writing Program 1; consent of instructor. Climate trends and patterns spanning the recent past and the future. Emphasis on natural processes that produce climate variations and human influence on these processes. Evidence of climate change and the role of global climate models in understanding climate variability. Offered in alternate years. GE credit: SciEng | QL, SE, WE. — [S.] Anastasio

121A. Atmospheric Dynamics (4)
Lecture—3 hours, extensive problem solving. Prerequisite: course 120, Mathematics 210, Physics 9B. Fundamental forces of atmospheric flow: nonideal reference frames; development of the equations of motion for rotating stratified atmospheres; isobaric and natural coordinate systems; geostrophic flow; thermal wind; circulation and variability. GE credit: SciEng | QL, SE, WE. — W. [W.] Chen, Nathan, Ulrich

133. Biometeorology (4)
Lecture—3 hours, discussion—1 hour. Prerequisite: one course in a biological discipline and Mathemat- ics 168 or consent of instructor. Atmospheric and biological interactions. Physical and biological basis for water vapor, carbon dioxide and energy exchanges with the atmosphere associated with plants and animals, including humans. Microclimate of plant canopies and microclimatic modification such as frost protection and windbreaks. GE credit: SciEng | QL, SE, SL, VL. — W. [W.] Paw U

150. Introduction to Computer Methods in Physical Sciences (4)
Lecture—3 hours; lecture/discussion—2 hours. Prerequisite: Mathematics 22B, Physics 9B, and a com- puter programming course such as Engineering Computer Science 30. Additional courses in fluid dynamics (course 121A or Engineering 103) and in Fourier transforms (Mathematics 111C or Physics 104A) are helpful, but not required. Computational techniques used in physical sciences. Integral and differential equation numerical solution; mainly finite differencing and spectral (Fourier transform) meth- ods. Time series applications [time-permanent]. Spe- cific applications drawn from meteorology. Accelerated introduction to FORTRAN including pro- gramming assignments. Enrollment limited to 12, preference to Atmospheric Science majors. Offered irregularly. (P/NP grading only.) GE credit: SE. — F. [F.] Grothjahn

158. Boundary-Layer Meteorology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 121A. Dynamics of the atmosphere nearest the Earth’s surface. Frictional drag and heat fluxes; intrinsic properties of turbulent flows; statistical and spectral tech- niques; use and interpretation of differential equations. Emphasis on the importance to weather,
Graduate

213. Advanced Hydroclimatology (3)
Lecture—3 hours. Prerequisite: course 115. Theoretical and applied aspects of energy and mass fluxes linking the earth's surface, atmosphere, and hydrologic system. Emphasis on regional scale analysis and modeling, spatial data representation, and climate change influences on precipitation and its hydroclimatic expression. Offered irregularly.—F. (S.)

231. Advanced Air Pollution Meteorology (3)
Lecture—3 hours. Prerequisites: Course 149A, 160 and one course in fluid dynamics. Processes determining transport and diffusion of primary and secondary pollutants. Models of chemical transformation, of the atmospheric boundary layer and of mesoscale wind fields, as applicable to pollutant dispersion problems. Offered irregularly.—F. (F.)

245. Climate Change, Water and Society (4)
Lecture—4 hours. Class size limited to 25 students. Integration of climate science and hydrology with policy and urban hydroclimatology and its impact upon natural and human systems. Assignments: readings, take-home examination on climate and hydrologic science, paper that integrates course concepts into a research prospectus or review article. (Same course as Hydrologic Sciences 245 and Ecology 245.)—F. (F) Fogg, Lubell, Ulrich (new course—eff. spring 15)

250. Meso-Scale Meteorology (3)
Lecture—3 hours. Prerequisite: graduate standing, course 150, a course in partial differential equations, or consent of instructor. The study of weather phenomena with horizontal spatial dimensions between 2.5 and 2500 kilometers. Methods of observational study and numerical modeling of the structure and temporal behavior of these weather systems. Offered in alternate years.—(W.) Chen (change in existing course—eff. spring 15)

255. Numerical Modeling of the Atmosphere (4)
Lecture—2 hours; laboratory—6 hours. Prerequisite: course 121B and Engineering S; course 150 recommended. Principles of numerical modeling of the dynamic, thermodynamic and physical processes of the atmosphere. Hands-on experiments on model development using the shallow water equations and the primitive equations. Operational forecast models. Offered in alternate years.—W. Chen (change in existing course—eff. spring 15)

270A. Topics in Atmospheric Science: Meteorological Statistics (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in meteorological statistics.—F, W, S. (F, W, S.)

270B. Topics in Atmospheric Science: Computer Modeling of the Atmosphere (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in computer modeling of the atmosphere.—F, W, S. (F, W, S.)

270C. Topics in Atmospheric Science: Design of Experiments and Field Studies in Meteorology (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in design of experiments and field studies in meteorology.—F, W, S. (F, W, S.)

270D. Topics in Atmospheric Science: Solar and Infrared Radiation in the Atmosphere (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in solar and infrared radiation in the atmosphere.—F, W, S. (F, W, S.)

270E. Topics in Atmospheric Science: Aerosol and Cloud Physics (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in aerosol and cloud physics.—F, W, S. (F, W, S.)

270F. Topics in Atmospheric Science: Atmospheric Chemistry (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in atmospheric chemistry.—F, W, S. (F, W, S.)

270G. Topics in Atmospheric Science: General Meteorology (1-3)
Discussion—1-3 hours. Prerequisite: consent or instructor. Applications and concepts in general meteorology.—F, W, S. (F, W, S.)

290. Seminar (1)
Seminar—1 hour. Prerequisite: graduate standing in Atmospheric Science or related field. Current developments in selected areas of atmospheric research. Topics will vary according to student and faculty interests. (S/U grading only)—F, W, S. (F, W, S.)

291A. Research Conference in Atmospheric Science; Air Quality Meteorology (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in Air Quality Meteorology. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

291B. Research Conference in Atmospheric Science; Biometeorology (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in Biometeorology. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

291C. Research Conference in Atmospheric Science; Boundary Layer Meteorology (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in Boundary Layer Meteorology. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

291D. Research Conference in Atmospheric Science; Climate Change (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in Climate Change. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

291E. Research Conference in Atmospheric Science; General Meteorology (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in General Meteorology. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

291F. Research Conference in Atmospheric Science; Atmospheric Chemistry (1-3)
Lecture/discussion—1-3 hours. Prerequisite: consent of instructor. Review and discussion of current literature and research in Atmospheric Chemistry. May be repeated up to 6 units for credit. (S/U grading only)—F, W, S. (F, W, S.)

Avian Science

New and changed courses in Avian Science (AVS)

Lower Division

11. Introduction to Poultry Science (3)
Lecture—3 hours. The mosaic of events that have tied poultry science to other scientific disciplines and poultry to humans. Poultry science techniques and production methods from the time of domestication to the present. One field trip required. GE credit: Sci-Eng, Wrt | SE.

14L. Management of Captive Birds (2)
Fieldwork—3 hours; lecture/discussion—1 hour. Prerequisite: consent of instructor. One weekly discussion and field trip to study practical captive management (housing, feeding, equipment, marketing, diseases). Visit facilities rearing birds such as commercial parrots, hobbyist exotics, ostrich, rap- tors, waterfowl, game birds, poultry and pigeons. GE credit: SciEng | SE.

15L. Captive Raptor Management (2)
Laboratory—3 hours; independent study—3 hours; one field trip. Hands-on experience handling birds of prey. Students are taught all of the skills required to handle and care for raptors, including their husbandry, biology, habitat requirements, cage design, veterinary care, rehabilitation methods, research potential and long-term care requirements. GE credit: SciEng | SE.

16L. Raptor Migration and Population Fluctuations (2)
Fieldwork—3 hours; discussion—1 hour. Prerequisite: consent of instructor: Identify raptors: study of effects of weather, crops, agricultural practices on fluctuations in raptor species and numbers. Familiarize with literature; design a project; survey study sites; collect, computerize, analyze data, compare with previous years. Species, observations, empha- sis different each quarter. One Saturday field trip. GE credit: SciEng | SE.

16LB. Raptor Migration and Population Fluctuations (2)
Fieldwork—3 hours; discussion—1 hour. Prerequisite: consent of instructor: Identify raptors: study of effects of weather, crops, agricultural practices on fluctuations in raptor species and numbers. Familiarize with literature; design a project; survey study sites; collect, computerize, analyze data, compare with previous years. Species, observations, empha- sis different each quarter. One Saturday field trip. GE credit: SciEng | SE.
16LC. Raptor Migration and Population Fluctuations (2)
Fieldwork—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Identify raptors: study of effects of weather, crops, agricultural practices on fluctuations in raptor species and numbers. Familiarize with literature; design a project; survey study sites; collect, computerize, analyze data, compare with previous years. Species, observations, emphasis differs each quarter. One Saturday field trip. GE credit: SciEng | SE
(change in existing course—eff. spring 15)

Upper Division
100. Avian Biology (3)
Lecture—2 hours. Prerequisite: Biological Sciences 1A or Biological Sciences 2B. Unique features of avian development and genomics: Incubation, Staging, Egg Structure/Function; Fertilization; Pre-oviposition, Oviposition, Cold Torpor; Post-ovipositional Development; Organogenesis; Growth; Sexual Differentiation; Extraembryonic Membranes; Mortality/Hatching; Genome Organization; Comparative Avian Genomics; Telomere Biology; Sex Chromosomes; Sex Determination; Advanced Technologies; Genome Manipulation; Mutations. GE credit: SciEng | SE—F. (F.) Delany
(change in existing course—eff. spring 15)

103. Avian Development and Genomics (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A and 1B, or an exotic sciences 2B and the unique features of avian development and genomics: Incubation, Staging, Egg Structure/Function; Fertilization; Pre-oviposition, Oviposition, Cold Torpor; Post-ovipositional Development; Organogenesis; Growth; Sexual Differentiation; Extraembryonic Membranes; Mortality/Hatching; Genome Organization; Comparative Avian Genomics; Telomere Biology; Sex Chromosomes; Sex Determination; Advanced Technologies; Genome Manipulation; Mutations. GE credit: SciEng | SE—F. (F.) Delany
(change in existing course—eff. spring 15)

115. Raptor Biology (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A or the equivalent. Study of birds of prey: classification, distribution, habits and habitats, migration, unique anatomical and physiological adaptations, natural and captive breeding, health and diseases, environmental concerns, conservation, legal considerations, rehabilitation, and falconry. Includes one Saturday field trips. Offered irregularly. GE credit: SciEng | SE—Su. (Su.)
(change in existing course—eff. spring 15)

121. Avian Reproduction (2)
Lecture—2 hours. Prerequisite: Biological Sciences 1A, 1B. Breeding cycles and reproductive strategies, egg and sperm formation, incubation, sexual development, imprinting, hormonal control of reproductive behavior and song. Species coverage includes wild and companion birds. Course has a physiological orientation. GE credit: SciEng | SE, SL
(change in existing course—eff. spring 15)

123. Management of Birds (3)
Lecture—3 hours. Prerequisite: Biological Sciences 1A, 1B. Captive propagation of birds, including reproduction, genetic management, health, feeding, artificial incubation, artificial insemination, and related legal aspects, including trade and smuggling. Emphasis on avian species and their role of captive propagation in conservation. GE credit: SciEng | SE, SL, WE
(change in existing course—eff. spring 15)

149. Egg Production Management (2)
Lecture—2 hours. Prerequisite: course 11 or the equivalent, or consent of instructor. Management of commercial table egg flocks as related to environment, nutrition, disease control, economics, housing, equipment, egg processing and raising replacement pullets. One Saturday field trip required. GE credit: SciEng | SE
(change in existing course—eff. spring 15)

150. Nutrition of Birds (1)
Lecture—1 hour. Prerequisite: Animal Biology 103 (may be taken concurrently). Principles of nutrition specific to avian species, including feedstuffs, feed additives, nutrient metabolism, energy systems, and nutritional support of egg production and growth. Use of computers for feed formulation to support production. GE credit: QL SciEng | SE—Klasing
(change in existing course—eff. spring 15)

170. Advanced Avian Biology (4)
Lecture/discussion—3 hours; project—1 hour. Prerequisite: course 100 or Evolution and Ecology 137 or Wildlife, Fish, and Conservation Biology 111. Ecology, behavior, functional morphology and life-history evolution of birds. Emphasis on the importance of body size as a principle determinant of most aspects of avian performance from lifespan to reproduction and species abundance. Analytical synthesis and critical thought emphasized. GE credit: SciEng | SE
(change in existing course—eff. spring 15)

190. Seminar in Avian Sciences (1)
Seminar—1 hour. Prerequisite: upper division standing in Avian Sciences and consent of instructor. May be repeated three times for credit. [P/NP grading only]—S. (S.) Klasing
(change in existing course—eff. spring 15)

1977. Tutoring in Avian Sciences (1-3)
Tutorial—1-3 hours. Prerequisite: Avian Sciences or related major; advanced standing; consent of instructor. Tutoring of students in lower division avian sciences courses; weekly conference with instructors in charge of courses; written critiques of teaching procedures. [P/NP grading only]
(change in existing course—eff. fall 14)

Graduate
203. Advanced Avian Development and Genomics (1)
Discussion—1 hour. Prerequisite: graduate standing; concurrent enrollment in course 103. In consultation with the instructor, students develop a lecture and associated instructional materials, i.e., lesson plan, including justification, reading and presentation and evaluation aids. The topic must complement a topic covered in Avian Sciences 103. Offered irregularly—F. (F.) Delany
(change in existing course—eff. spring 15)

290. Seminar (1)
Seminar—1 hour. Reports and discussions of recent advances and selected topics of current interest in avian genetics, physiology, nutrition, and poultry technology. —F. (F.) Klasing
(change in existing course—eff. spring 15)

2977. Supervised Teaching in Avian Sciences (1-4)
Tutoring—1-4 hours. Prerequisite: graduate standing and consent of instructor. Tutoring of students in lower, upper division, and graduate courses in Avian Sciences; weekly conference with instructor in charge of course; written critiques of teaching methods in lectures and laboratories. [S/U grading only]—F. W. S. (F. W. S.)
(change in existing course—eff. spring 15)

Biochemistry, Molecular, Cellular, and Developmental Biology
New and changed courses in Biochemistry, Molecular, Cellular and Developmental Biology (BCB) Graduate
210. Molecular Genetics and Genomics (3)
Lecture/discussion—3 hours. Prerequisite: Biological Sciences 101 and Molecular & Cellular Biology 121, or equivalent. Pass One restricted to graduate students. Emphasizes modern techniques and genomic approaches to address fundamental biological questions. Introduction to the strengths of prokaryotic and eukaryotic model systems and serves as building block for the BMCDB core courses, which use model systems to develop their themes. —F. (F.) Engerbrecht
(new course—eff. fall 15)

211. Macromolecular Structure and Interactions (3)
Lecture—3 hours. Prerequisite: Biological Sciences 102, or the equivalent, or consent of instructor. Pass One restricted to graduate students. Analysis of basic processes governing cell organization, division, and transport. Study of the integration and regulation of cell behavior in response to changes in cellular environment. No credit for students that have taken course 221A. —F. (F.) Baldwin, Segal, Wilson
(new course—eff. fall 14)

212. Cell Biology (3)
Lecture—3 hours. Prerequisite: Biological Sciences 104, or the equivalent, or consent of instructor. Pass One restricted to graduate students. Analysis of basic processes governing cell organization, division, and transport. Study of the integration and regulation of cell behavior in response to changes in cellular environment. No credit for students that have taken course 221A. —W. (W.) AlBassam, Kim, McNally, Powers
(change in existing course—eff. spring 15)

213. Developmental Biology (3)
Lecture—3 hours. Prerequisite: undergraduate biology course or consent of instructor. Pass One restricted to graduate students. Fundamental principles in embryonic development that guide application of modern cellular and genomic approaches to understand developmental mechanisms. Emphasis on experimental approaches used to critically address scientific questions. —W. (W.) Brady, Draper, Lott, Tucker
(change in existing course—eff. spring 15)

214. Molecular Biology (3)
Lecture—3 hours. Prerequisite: course 211, or equivalent, or consent of instructor. Pass One restricted to graduate students. Investigation of the basic cellular processes in prokaryotes and eukaryotes that govern the central dogma of molecular biology (DNA-RNA-protein). No credit for students that have taken course 221C. —S. (S.) Chedin, Fraser, Heyer
(change in existing course—eff. spring 15)

215. Graduate Reading Course (2)
Discussion—10 hours. Prerequisite: graduate standing or consent of instructor. Restricted to graduate students. Development of critical reading skills through study of major paradigm advances in specialized fields of biochemistry, molecular, cellular, and...
devlopmental biology. Emphasis on active learning and student participation. Guided analysis of literature and major advances. May be repeated two times for credit when topic differs.—S. (S.J.) Chen, Fairclough, Genetos, Giulivi, Inoue, Vaughan (change in existing course—eff. spring 15)

220L. Advanced Biochemistry Laboratory Rotations (5)
Laboratory—15 hours. Prerequisite: course 210 and 211 (may be taken concurrently) and 120L or the equivalent. Open to graduate students. Two five-week assignments in BMB cell lab. Independent research projects with emphasis on methodology/procedural experience, experimental design, proposal writing and oral communication of results. May be repeated two times for credit.—F. (F, F, S, A. Alback, Baldwin, Haudenschild, Tan (change in existing course—eff. spring 15)

251. Molecular Mechanisms in Early Development (3)
Lecture—3 hours. Prerequisite: graduate standing or consent of instructor. Introductory background in developmental biology and/or cell biology recommended. Analysis of the early events of development including: germ cells and other stem cells, gametogenesis, meiosis, imprinting, fertilization, genetically-engineered organisms, egg activation and establishment of embryonic polarity with focus on cellular events including gene regulation and cell signaling. Offered in alternate years.—F. (F) Draper (change in existing course—eff. spring 15)

255. Molecular Mechanisms in Pattern Formation and Development (3)
Lecture—3 hours. Prerequisite: graduate standing or consent of instructor; introductory background in developmental biology and/or genetics recommended. Genetic and molecular analysis of mechanisms that control animal development after fertilization. Establishment of embryonic axes, cell fate and embryonic pattern; induction, apoptosis, tissue patterning. Critical reading of current literature in C. elegans, Drosophila, and mouse genetic model systems. Offered in alternate years.—F. Notze, Rose (change in existing course—eff. spring 15)

257. Cell Proliferation and Cancer Genes (3)
Lecture—1.5 hours; seminar—1.5 hours. Prerequisite: course 221C and 221D or equivalents. Genetic and molecular alterations underlying the conversion of normal cells to cancers, emphasizing regulatory mechanisms and pathways. Critical reading of the current literature and development of experimental approaches.—F. (F) Carraway (new course—eff. fall 15)

Biological Sciences

New and changed courses in Biological Sciences (BIS)

Lower Division

2A. Introduction to Biology: Essentials of Life on Earth (5)
Lecture—3 hours; discussion—2 hours. Essentials of life including sources and use of energy, information storage, responsiveness to natural selection and cellularity. Origin of life and influence of living things on the chemistry of the Earth. Not open for credit to students who have completed course 1A with a grade of C- or better. GE credit: SciEng | QL, SS.—F, W, S, F, S. (F, W, S.) (change in existing course—eff. spring 15)

2B. Introduction to Biology: Principles of Ecology and Evolution (5)
Lecture—4 hours; discussion—1 hour; laboratory—3 hours. Prerequisite: grade of C- in course 1A or 2A. Introduction to basic principles of ecology and evolutionary biology, focusing on the fundamental mechanisms that generate biological diversity across scales ranging from molecules and genes to global processes and patterns. Not open for credit for students who have completed Biological Sciences 18 with a grade of C- or better. GE credit: SciEng | QL, SE, SL, VL.—F, W, S. (F, W, S.) (change in existing course—eff. spring 15)

2C. Introduction to Biology: Biodiversity and the Tree of Life (5)
Lecture—4 hours; laboratory—3 hours. Prerequisite: course 1B or 2B completed with a C- or better. Introduction to organismal diversity, using the phylogenetic tree of life as an organizing theme. Lectures and laboratories cover methods of phylogenetic reconstruction, current knowledge of the tree of life, and the evolution of life’s most important and interesting innovations. Not open for credit to students who have completed course 1C with a grade of C- or better. GE credit: SciEng | QL, SE, SL, VL.—F, W, S, F, W, S. (F, W, S.) (change in existing course—eff. spring 15)

5. Exploring Biological Sciences (1)
Seminar—1 hour. Consent of instructor required. Enrollment limited to first year CBS students. Introduction to biology at UC Davis through discussions with faculty and speakers from industry and medicine. (P/NP grading only)—F, W, S, F, W, S, (F, W, S, S. Hildreth (new course—eff. fall 15)

10. Everyday Biology (4)
Lecture—3 hours; discussion—1 hour. Everyday biological concepts using contemporary readings for non-scientists. Key topics include: personal genomics; food and health; climate and evolution; brain and behavior. Innovative projects apply biological concepts in context. GE credit: SciEng | QL, SS.—F, W, S, F, W, S, S. (F, W, S, S.) (change in existing course—eff. winter 16)

10V. General Biology (4)
(canceled course—eff. spring 15)

11L. Basic Life Sciences Laboratory (1)
Laboratory—6 hours. Prerequisite: enrollment limited to BUSP students; consent of instructor required. Basic laboratory skills in life sciences research, including microbiology, molecular biology, and genetics.—S. (Su.) (change in existing course—eff. summer 14)

20Q. Modeling in Biology (2)
Lecture—1 hour; discussion—1 hour. Prerequisite: Mathematics 16B (may be taken concurrently). Introduction to the application of quantitative methods to biological problems. Students will use a mathematical software package to tackle problems drawn from all aspects of biology. Offered irregularly.—Mogillner, Sutter (change in existing course—eff. spring 15)

92. Internship in Biological Sciences (1-5)
Internship—3-36 hours. Prerequisite: lower division standing; consent of instructor. Restricted to lower division standing; grading only. (change in existing course—eff. fall 14)

99. Special Study for Undergraduates (1-5)
Prerequisite: lower division standing; consent of instructor. Restricted to lower division standing. (P/NP grading only) (change in existing course—eff. fall 14)

Upper Division

101. Genes and Gene Expression (4)
Lecture—4 hours. Prerequisite: course 2A and 2B; Chemistry 8A or 118B or 128A; Statistics 100 or 13 or 102 or 130A (Statistics 100 preferred). Nucleic acid structure and function; gene expression and its regulation; transcription and translation; transmission genetics; molecular evolution. GE credit: SciEng | QL, SE, SL—F, W, S, F, W, S, S. Brathy, Comai, Dvorak, Engerechter, Kleibeinstein, Langley, Lott, Nord, Rodriguez, Ross-Iberra, Torelli (change in existing course—eff. spring 15)

101D. Genes and Gene Expression Discussion (1)
Discussion—1 hour. Prerequisite: course 101 (concurrently); consent of instructor. Discussion and problem solving related to fundamentals of classical and molecular genetics as presented in course 101. (P/NP grading only)—F, W, S, F, W, S, S. Brathy, Comai, Dvorak, Engerechter, Kleibeinstein, Langley, Lott, Nord, Rodriguez, Ross-Iberra, Torelli (change in existing course—eff. spring 15)

102. Structure and Function of Biomolecules (3)
Lecture—3 hours. Prerequisite: course 1A or 2A; Chemistry 88B or 118B or 128B. Structure and function of macromolecules with emphasis on proteins, catalysis, enzyme kinetics, lipids, membranes, and proteins as machines. Only one unit of credit for students who have completed Animal Biology 102 & 1.5 units of credit for students who have completed Biological Sciences 105. GE credit: SciEng | QL, SE—F, W, S, F, W, S, S. Cheng, Gasser, Hilt, Leal (change in existing course—eff. spring 15)

103. Bioenergetics and Metabolism (3)
Lecture—3 hours. Prerequisite: course 102. Fundamentals of the carbon, nitrogen, and sulfur cycles in nature, including key reactions of biomolecules such as carbohydrates, amino acids, lipids, and nucleotides, and of energy production and use in different types of organisms. Principles of metabolic regulation. 1.5 units of credit for student who has completed course 105; 1 unit of credit if students who have completed Animal Biology 103. GE credit: SciEng | QL—F, W, S, S. Su, F, W, S, S. (F, W, S, S.) (change in existing course—eff. spring 15)

104. Cell Biology (3)
Lecture—3 hours. Prerequisite: course 101; 102 or 103. Membrane receptors and signal transduction; cell trafficking; cell cycle; cell growth and division; extracellular matrix and cell-cell junctions; cell development; immune system. GE credit: SciEng | SE—F, W, S, F, W, S. (C. Carrasco, Dinesh-Kumar, S. Lin, B. Liu, McNally, Privalsky, Starr, Xu (change in existing course—eff. spring 15)

105. Biomolecules and Metabolism (3)
Lecture—3 hours. Prerequisite: courses 1A, 1B, and 1C, or 2A, 2B, and 2C; Chemistry 88B or 118B or 128B. Fundamentals of biochemical processes, with emphasis on protein structure and function; energy metabolism; catabolism of sugars, amino acids, and lipids; and gluconeogenesis. One and one half units of credit for students who have completed course 102 or 103; no credit for students who have completed both course 102 and 103; one unit of credit for students who have completed Animal Biology 102 or 103; no credit for students who have completed both Animal Biology 102 and 103. GE credit: SciEng | QL, SE—F, W, S, F, W, S, S. Hilt, They (change in existing course—eff. spring 15)

122. Population Biology and Ecology (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: courses 1A, 1B, 1C, or 2A, 2B, 2C; residence at Bodega Marine Laboratory required. Biological and

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum 27

2014-2016 General Catalog Course Supplement and Policies and Requirements Addendum
physical processes affecting plant and animal populations in the rich array of habitats at the Bodega Marine Laboratory ecological preserve. Emphasis on field experience, with complementing lectures to address population and community processes. See Bodega Marine Laboratory Program. GE credit: SciEng | OL, QL, SE, SL, VL, WE — S. (S.) Morgan
(change in existing course—eff. spring 15)

122P. Population Biology and Ecology/Advanced Laboratory Topics (5)
Laboratory — 12 hours; discussion — 1 hour. Prerequisite: course 122 concurrently. Residence at Bodega Marine Laboratory required. Training in scientific research, from hypothesis testing to publication, including methods of library research. Research related to topic covered in course 122. Final presentation both oral and written. See Bodega Marine Laboratory Program. GE credit: SciEng | SE, VL, WE — S. (S.) Morgan
(change in existing course—eff. spring 15)

123. Undergraduate Colloquium in Marine Science (1)
Seminar — 1 hour. Prerequisite: enrolled student at the Bodega Marine Laboratory. Series of weekly seminars by recognized authorities in various disciplines of marine science from within and outside the UC system. Includes informal discussion with speaker. Course will be held at Bodega Marine Laboratory. (P/NP grading only) (See above description for Bodega Marine Laboratory Program.) — S. (S.) Cherr, Morgan
(change in existing course—eff. spring 15)

124. Coastal Marine Research (3)
Laboratory — 6 hours; fieldwork — 6 hours; laboratory/dis- cussion — 1 hour. Prerequisite: upper division standing or consent of instructor; concurrent enrollment in at least one course from Environmental Science and Policy 124, 152, Evolution and Ecology 106, 110, 114; residence at or near Bodega Marine Lab required. Student must complete assignments at the application at http://www.bml.ucdavis.edu. Independent research on topics related to the accompanying core Bodega Marine Laboratory summer courses. Students will select one instructor to be a primary mentor, but integrative topics that draw on the expertise of several BML faculty members will be encouraged. May be repeated two times for credit. GE credit: SciEng | OL, QL, SE, VL, WE — Su. (Su.) Hill, Gaylord, Langier, Sanford
(change in existing course—eff. spring 15)

195A. Science Teaching Internship Program (4)
Lecture/discussion — 2 hours; internship — 6 hours. Prerequisite: upper division standing in a science major or consent of instructor. Major in science; junior or senior status (based on units); application and interview; class size limited to 24 students. Basic teaching techniques including lesson planning, classroom management, and presentation skills. Interns spend time in K-12 science classrooms working with a master teacher observing, assisting with labs and activities, managing students, and teaching lessons. (P/NP grading only.) Offered irregularly.
(change in existing course—eff. spring 15)

199. Special Study in Biological Sciences (1-5)
Prerequisite: upper division standing and consent of instructor. (P/NP grading only) — F, W, S. (F, W, S.) Cherr, Morgan
(change in existing course—eff. spring 15)

Biophotonics

New and changed courses in Biophotonics (BPT)
Graduate

280. Biophotonics Internship (7-12)
Internship — 36 hours. Prerequisite: graduate standing. Restricted to students in the Designated Emphasis in Biophotonics. Research experience distinct from the student’s dissertation topic at an industrial company, a national laboratory, or a cross-college laboratory for one quarter. (S/U grading only) — F, W, S. (F, W, S.)
(change in existing course—eff. fall 14)

290. Biophotonics Seminar (1)
Seminar — 1 hour. Prerequisite: graduate standing or consent of instructor. Restricted to graduate standing. Presentation of current research in the area of biophotonics by experts in the field, followed by group discussion. May be repeated up to three times for credit. (S/U grading only) — F, W, S. (F, W, S.) Yeh
(change in existing course—eff. fall 14)

Biophysics

New and changed courses in Biophysics (BPH)
Graduate

255. Biophotonics in Medicine and the Life Sciences (3)
Lecture/discussion — 3 hours. Prerequisite: Physics 108 and Biology 101-105; Biomedical Engineering 202 highly recommended; graduate standing. Introduction to the science and technology of biomedical optics and photonics, with an overview of applications in medicine and the life sciences. Emphasis on research supported by NSF Center for Biophotonics at UC Davis Medical Center. (Same course as Applied Science 255 and Biomedical Engineering 255.) — W. (W) Chuang, Matthews
(change in existing course—eff. spring 15)

293. Introduction to Research Topics (1)
Seminar — 1 hour. Presentation of current research activities of the Biophysics Graduate Group faculty. Facilitation of students in developing their research interest, and promoting collegial interactions. May be repeated one time for credit if topics differ. (S/U grading only) — F (F)
(change in existing course—eff. fall 14)

Biostatistics

New and changed courses in Biostatistics (BST)
Graduate

290. Seminar in Biostatistics (1)
Seminar — 1 hour. Restricted to graduate standing. Seminar on advanced topics in the field of biostatis- tics. Presented by members of the Biostatistics Graduate Group and other guest speakers. May be repeated for up to 12 units of credit. (S/U grading only) — F, W, S. (F, W, S.)
(change in existing course—eff. fall 14)

Biotechnology

New and changed courses in Biotechnology (BIT)
Lower Division

1. Introduction to Biotechnology (4)
(cancelled course—eff. fall 14)

1Y. Introduction to Biotechnology (4)
Lecture — 2 hours; web virtual lecture — 1 hour; discus- sion — 1 hour. Principles and technologies of biotech- nology as applied to agriculture, the environment, and medicine. Business plans and pre- sentation pitches for new biotechnology products. Bioinformatics approaches exploring genomic data bases and DNA manipulations in silico. GE credit: SciEng | SE. — S. (S.) Daneker, Yoder
(new course—eff. spring 14)

Upper Division

150. Applied Bioinformatics (4)
Lecture — 2 hours; laboratory/discussion —2 hours. Prerequisite: Computer Science Engineering 10 or 15 or Plant Science 21; Biological Sciences 101 and 104; Plant Science 120 or Statistics 13 or Sta- tistics 100. Limited enrollment. Concepts and pro- grams needed to apply bioinformatics in biotechnology research. Sequence analysis and annotation and use of plant and animal databases for students in biological and agricultural sciences. Two units of credit for students who have completed Computer Science Engineering 124. GE credit: SciEng | SE, VL. — Runcie
(change in existing course—eff. spring 15)

171. Professionalism and Ethics in Genomics and Biotechnology (3)
Lecture — 1 hour; discussion — 2 hours. Prerequisite: upper division standing in a natural science major. Real and hypothetical case studies to illustrate ethical issues in genomics and biotechnology. Training and practice in difficult ethical situations and evalu- ating personal and social consequences. GE credit: SciEng | SE, SL, WE — F, W, S. (F, W, S.) Bennett, Bradford, Yoder
(change in existing course—eff. spring 15)

194H. Honors Thesis in Biotechnology (1-2)
Independent Study — 3-6 hours. Prerequisite: senior standing in Biotechnology with 3.250 GPA or higher and completion of courses 188 and 189L. Independent study of selected topics under the direction of a member or members of the staff. Completion will involve the writing of a senior thesis. (Deferred grad- ing only, pending completion of sequence) (P/NP grading only) GE credit: SciEng | SE, WE — F, W, S., Su. (F, W, S., Su.) Yoder
(change in existing course—eff. winter 16)

Cell and Developmental Biology

New and changed courses in Cell and Developmental Biology (CDB)
Graduate

205. Topics in Cell Biology of the Cytoskeleton (2)
(cancelled course—eff. fall 14)
Cell Biology and Human Anatomy

New and changed courses in Cell Biology and Human Anatomy (CHA)

Upper Division

101L. Human Gross Anatomy Laboratory (4)
Lecture—4 hours. Prerequisite: Biological Sciences 2A; concurrent enrollment in Exercise Biology 106L or course 101L strongly recommended. Upper division students only; Pass Two open to upper division Exercise Biology or Anthropology majors only; Pass Two open to Seniors in any major; open enrollment at the start of the quarter for upper division students in any major. Detailed study of the external and internal structure of the human body, with emphasis on function and clinical relevance to students entering health care professions. (Same course as Exercise Biology 106L) GE credit: SciEng | SE.—W. (W.) Gross (change in existing course—eff. fall 14)

101L. Human Gross Anatomy Laboratory (3)
Lecture—3 hours; laboratory—5 hours. Prerequisite: course 2C or 2CH. Significant aspects of human biology requiring a knowledge of anatomy and physiology will be emphasized. Students will have the opportunity to apply their study in the laboratory by conducting research under the guidance of a faculty adviser, culminating in the writing of an extensive report. Offered irregularly. (Same course as Exercise Biology 106L) GE credit: SciEng | SE.—W. (W.) Gross (change in existing course—eff. fall 14)

Graduate

400. Developmental, Gross, and Radiologic Anatomy (7.5)
Lecture—3 hours; laboratory—5 hours. Prerequisite: consent of instructor. Medical Students only. An integrated presentation of development, gross and radiologic anatomy. Embryology and radiology correlated with the dissection of the entire body. Embryology from implantation to birth. (Deferred grading only, pending completion of sequence.) (F/F grading only)—F. (F.) Tucker (change in existing course—eff. spring 15)

402. Cell and Tissue Biology (4.5)
Lecture—2 hours; laboratory—4 hours. Prerequisite: approval of the Committee on Student Progress. Medical Students only. Microscopic structure of the basic cells, tissues and organs of the body with an emphasis on how structure explains function. Analysis and identification of sectioned material at the light microscopic and ultrastructural levels. (Deferred grading only, pending completion of sequence.) (F/F grading only)—F. (F.) Tucker (change in existing course—eff. spring 15)

Chemistry

New and changed courses in Chemistry (CHE)

Lower Division

8A. Organic Chemistry: Brief Course (2)
Lecture—2 hours. Prerequisite: course 28B, or better, or 2BH, C or better. With course 8B, an introduction to the nomenclature, structure, chemistry, and reaction mechanisms of organic compounds. Intended for students majoring in areas other than organic chemistry. —F, S. (F, S.) (change in existing course—eff. spring 15)

10. Concepts of Chemistry (4)
Lecture—4 hours. Survey of basic concepts and contemporary applications of chemistry. Designed for non-science majors and not as preparation for Chemistry 2A. Not open for credit to students who have had Chemistry 2A, but students with credit for course 10 may take Chemistry 2A for full credit. GE credit: SciEng, Wrt | SL, SL—F (F) (change in existing course—eff. fall 14)

Upper Division

100. Environmental Water Chemistry (3)
Lecture—3 hours. Prerequisite: course 2C or 2CH. Practical aspects of water chemistry in the environment, including thermodynamic relations, coordination chemistry, solubility calculations, redox reactions and rate laws. Computer modeling of the evolution in water chemistry from contact with minerals and gases. —W. (W.) Casey (change in existing course—eff. winter 16)

104. Forensic Applications of Analytical Chemistry (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: course 2C or 2CH. Theory and application of standard methods of chemical analysis to evidentiary samples. Use and evaluation of results from screening tests, FTIR, GC and GCMS to various sample types encountered in forensics. —F. (F.) Land (change in existing course—eff. winter 16)

108. Molecular Biochemistry (3)
Lecture—3 hours. Prerequisite: course 118C or 128C. Pass One open to Chemistry majors. Chemical principles and experimental methods applied to the biological sciences to understand the molecular structure and function of proteins, nucleic acids, carbohydrates, and membrane lipids. —S. (S.) Ames, Fisher (change in existing course—eff. winter 16)

122. Chemistry of Nanoparticles (3)
Lecture—3 hours. Prerequisite: course 110C (may be taken concurrently) or 107B (may be taken concurrently). Chemical and physical aspects of inorganic nanoparticles. Topics include synthesis, structure, colloidal behavior, catalytic activity, size and shape dependency of physical properties, analytical methods and applications. —S. (S.) Osterloh (change in existing course—eff. winter 16)

194HA. Undergraduate Honors Research (2)
Independent study—2 hours. Prerequisite: open only to chemistry majors who have completed 135 units and who qualify for the honors program. Original research under the guidance of a faculty adviser, culminating in the writing of an extensive report. (Deferred grading only, pending completion of sequence.)—F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

194HB. Undergraduate Honors Research (2)
Independent study—2 hours. Prerequisite: open only to chemistry majors who have completed 135 units and who qualify for the honors program. Original research under the guidance of a faculty adviser, culminating in the writing of an extensive report. (Deferred grading only, pending completion of sequence.)—F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

194HC. Undergraduate Honors Research (2)
Independent study—2 hours. Prerequisite: open only to chemistry majors who have completed 135 units and who qualify for the honors program. Original research under the guidance of a faculty adviser, culminating in the writing of an extensive report. (Deferred grading only, pending completion of sequence.)—F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Graduate

204. Mathematical Methods in Chemistry (3)

209. Special Topics in Physical Chemistry (3)
Lecture—3 hours. Prerequisite: courses 210A and 211A. Graduate standing in Chemistry. Advanced topics in physical chemistry, biophysical chemistry or chemical physics chosen from areas of current research interest. May be repeated for credit when topic differs. Offered irregularly.—F. (F.) (change in existing course—eff. spring 15)

21A. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)

21B. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)

21C. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)

21D. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)

21E. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)

21F. Special Topics in Organic Chemistry (3)
Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course.—F. (F.) (change in existing course—eff. summer 15)
221G. Special Topics in Organic Chemistry (4)  Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course. —F. [F] (change in existing course—eff. summer 15)

221H. Special Topics in Organic Chemistry (3)  Lecture—3 hours. Selected topics of current interest in organic chemistry. Topics will vary each time the course is offered, and in general will emphasize the research interests of the staff member giving the course. —F. [F] (change in existing course—eff. summer 15)

280. Seminar in Ethics for Scientists (2)  Seminar—2 hours. Restricted to 20 students; graduate standing in any department of science or engineering. Studies of topical and historical issues in the ethics of science, possibly including issues such as proper authorship, peer review, fraud, plagiarism, responsible collaboration, and conflict of interest. Limited enrollment. [Same course as Physics 280 and Environ. Chemical and Materials Science 280.] (S/U grading only)—S. [S.] (change in existing course—eff. fall 14)

294. Presentation of Chemistry Research (1)  Seminar—2 hours. Prerequisite: graduate standing. Restricted to graduate students in Chemistry who have not yet given their departmental presentation. Introduces first- and second-year Chemistry graduate students to the process of giving an effective research presentation. Advanced Ph.D. students give formal seminars describing the design and execution of their research projects. May be repeated three times for credit. (S/U grading only)—W-, S-. [S. (S.)] (change in existing course—eff. fall 14)

296. Research in Pharmaceutical Chemistry (6)  Laboratory—18 hours. Prerequisite: courses 130A and 1308, 135, and 233 (may be taken concurrently), consent of instructor. Restricted to students in the Integrated B.S./M.S. Program in Chemistry. Laboratory provides qualified graduate students with the opportunity to pursue original investigation in Pharmaceutical Chemistry and allied fields in order to fulfill the letter-graded research requirement of the Integrated B.S./M.S. Program in Chemistry (Pharmaceutical Chemistry Emphasis). May be repeated three times for credit when topic differs. —F, W, S, Su. [F, W, S, Su.] (change in existing course—eff. fall 14)

Chicana/o Studies

New and changed courses in Chicana/o Studies (CHI)

Lower Division

10. Introduction to Chicana/o Studies (4)  Lecture—3 hours; discussion—1 hour. Analysis of the situation of the Chicana/o (Mexican-American) people, emphasizing their history, literature, political movements, education and related areas. GE credit: Div, Wtr | ACH, AH, OL, SS, DD, WE, —F. [F, S, F] Jackson (change in existing course—eff. spring 15)

23. Qualitative Research Methods (4)  Lecture/discussion—3 hours; discussion—1 hour. Dominant models of qualitative inquiry in educational and social science research as well as mestizo approaches to research with latinos. Emphasis given to choosing and designing culturally appropriate strategies to investigate latino health, education, social policy, and related issues. GE credit: SocSci | AH, OL, SS, WE, —S. [S.] (change in existing course—eff. spring 15)

30. United States Political Institutions and Chicana/os (4)  Lecture/discussion—3 hours; term paper. Overview of the major political institutions and ideologies of the United States and the Chicana/o people’s historical and contemporary relationship to those institutions, and in general will emphasize the research interests of the staff member giving the course. —F. [F] (change in existing course—eff. spring 15)

405. Comparative Health: Leading Causes of Death (4)  Lecture—4 hours. Prerequisite: Statistics 13 or consent by instructor. Introduction to epidemiology of leading causes of death for ethnic/racial minorities. Assessment of disproportionate rates at which ethnic/racial minorities suffer and die from chronic and infectious diseases & injuries & statistical methods used to calculate these rates. Offered abroad. Not open for credit to students who have completed course 40. GE credit: SocSci | Div, Wtr | QL, SS, WE, —de la Torre (change in existing course—eff. spring 15)


Upper Division

100. Chicana/Chicano Theoretical Perspective (4)  Lecture/discussion—3 hours; term paper. Prerequisite: courses 10 and 50. Critical examination of emerging Chicana/o Studies theoretical perspec- tives in light of contemporary intellectual frameworks in the social sciences, arts, and humanities. Includes analysis of practices of self-representation, and socio-cultural developments in the Chicana/o community. GE credit: ACHG, DD, SS, WE, —S. [S.] Chhabra, Zoe (change in existing course—eff. spring 15)

112. Globalization, Transnational Migration, and Chicana/o and Latino/a Communities (4)  Lecture—4 hours. Prerequisite: course 10. Chicana/o and Latino/a migration experiences within a global context. Topics include national and/or transnational migration in Mexico, Central America, and the United States. GE credit: SocSci, Div, Wtr | ACHG, DD, OL, SS, WE, —Flores, Deeb-Sossa (change in existing course—eff. spring 15)


123. Psychological Perspectives on Chicana/o and Latina/o Children and Adolescents (4)  Lecture—3 hours; term paper. Prerequisite: course 10 or 21. Restricted to upper division standing. Psychological and educational development of Chi- cana/o/latina children and adolescents, with particular attention to the formation of ethnic, gender, race, and sexual identities. GE credit: SocSci, Div, Wtr | ACHG, DD, OL, SS, WE, —Flores (change in existing course—eff. fall 14)

130. United States-Mexican Border Relations (4)  Lecture—3 hours; term paper. Prerequisite: upper division standing. Theories of U.S.-Mexican border relations, with an overview of the political, economic, and social relationships and an in-depth analysis of immigration, labor, and social justice. GE credit: Div | ACHG, DD, SS, WE, —F. [F.] Chhabra, Rosa (change in existing course—eff. spring 15)

131. Chicanas in Politics and Public Policy (4)  Lecture/discussion—4 hours. Prerequisite: course 30 or Political Science 1. Historical and political analysis of Chicanas/Latinas political involvement and activities in the general political system, women’s movement, Chicano movement, and Chicana/o movement. Course also examines the public policy process and the relationship of Chicanas/Latinas to public policy formation. Offered in alternate years. GE credit: SocSci, Div | ACHG, DD, SS, WE, —Yeh (change in existing course—eff. winter 15)

1355. Transnational Latina/o Political Economy (4)  Lecture—3 hours; term paper. Prerequisite: Spanish 3 or equivalent, or consent of instructor; Economics 1A and 1B recommended. Intensive reading, discussion and research on selected topics from Latin America and the US with regard to immigrant and native communities. Topics include comparative immigration and macroeconomic policies in the US and Latin America. Offered in a Spanish speaking country. Offered irregularly. GE credit: OL, WC, WE (change in existing course—eff. spring 15)

140A. Quantitative Methods: Chicano/ Latino Health Research (4)  Lecture—3 hours; discussion/laboratory—1 hour. Prerequisite: two years of high school algebra or the equivalent in college. Focuses on measuring Latino/ Chicano health outcomes using a quantitative approach. Assesses main types of study designs and addresses measurement of disease frequency and health effects. Offered in alternate years. GE credit: SciEng | ACHG, DD, QL, SS, WE, —S. [S.] (change in existing course—eff. spring 15)

141. Community-Based Participatory Research and Chicana/o and Latina/o Health (4)  Lecture/discussion—3 hours; term paper. Overview of CBPR, as well as methodological CBPR consider- ations in building community partnerships, community assessment, issue analysis, research planning, data gathering, and data sharing with Chicana/o and Latinas/o communities in particular. GE credit: WE, —F. [F.] Flores, Deeb-Sossa (new course—eff. spring 15)

150. The Chicana and Chicano Movement (4)  Lecture—3 hours; term paper. Development of the Chicana Movement within the context of the socio- political movements of the 1960’s in a national and global perspective. Ideological/political perspec-
lives and the implications for political strategies. GE credit: ArtHum, Div, Wrt | AGCH, AH or SS, DD, WC, WE—W (W) (change in existing course—eff. spring 15)

161. Queer Latinidad (4)
Lecture/discussion—3 hours, term paper or discussion. Introduction to queer Latina and Latino studies and cultural production. GE credit: ArtHum or SocSci, Div, Wrt | AGCH, AH or SS, DD, WE—S (S) de la Mora, Zepeda (new course—eff. fall 15)

171. Mexican and Chicano Mural Workshop (4)
Studio—8 hours; independent study—1 hour. Pre-requisite: course 70; consent of instructor. The mural, a collective process that empowers students and people through design and execution of mural paintings in the tradition of the Mexican Mural Movement, introduces materials and techniques. May be repeated one time for credit. GE credit: ArtHum | AH, VL—S. Jackson, Montoya (change in existing course—eff. spring 15)

172. Chicano/a Voice/Poster Silk Screen Workshop (4)
Studio—8 hours; independent study—1 hour. Pre-requisite: course 73 and consent of instructor. The poster as a new and exciting form used by Chicana/os and other people of color to point to the defects of social and political existence and the possibility for change, from the Chicana/o artist's perspective. May be repeated one time for credit. GE credit: AH, OL, VL—W. Jackson (change in existing course—eff. spring 15)

180. Grant Writing in the Chicano/a/ Latina/o Community (4)
Lecture—4 hours. Prerequisite: course 10, 23 or consent of instructor. Upper division standing. Overview of key elements for writing proposals. Topics include community needs assessments, development of human subjects protocols, data collection, methods, evaluation designs and community based methodologies for developing and writing grants. GE credit: AH, OL, WE—W. Ho (change in existing course—eff. spring 15)

182. Race and Juvenile Justice (4)
Lecture—4 hours. Prerequisite: course 10 or equivalent. Individual and institutional responses to “treatment” of youth through law and legal process, juvenile court. Topics include history of juvenile justice, race, and culture. GE credit: AH, OL, WE—Rojas (change in existing course—eff. spring 15)

184. Latino Youth Gangs in Global Perspective (4)
Lecture—3 hours; term paper. Comparative analysis of Latino youth gangs in Europe, Latin America, and the United States. Social, economic, political, and cultural factors leading to youth gangs as well as the responses are considered within a global perspective. Not open for credit to students who have completed course 184S. Offered irregularly. GE credit: SocSci | AGCH, DD, OL, SS, WC, WE (change in existing course—eff. spring 15)

194HA. Senior Honors Research Project (2-5)
Independent study—6-15 hours. Prerequisite: senior standing in Chicana/o Studies major. Student is required to read, research, and write Honors Thesis on Chicana/o Studies topics. (Deferred grading only, pending completion of sequence.) GE credit: OL, WE—F, W, S (F, W, S) (change in existing course—eff. summer 15)

194HB. Senior Honors Research Project (2-5)
Independent study—6-15 hours. Prerequisite: senior standing in Chicana/o Studies major. Student is required to read, research, and write Honors Thesis on Chicana/o Studies topics. (Deferred grading only, pending completion of sequence.) GE credit: OL, WE—F, W, S (F, W, S) (change in existing course—eff. summer 15)

194HC. Senior Honors Research Project (2-5)
Independent study—6-15 hours. Prerequisite: senior standing in Chicana/o Studies major. Student is required to read, research, and write Honors Thesis on Chicana/o Studies topics. (Deferred grading only, pending completion of sequence.) GE credit: OL, WE—F, W, S (F, W, S) (change in existing course—eff. summer 15)

Graduate

230. Chicano/Latino Hispanic Politics (4)
Seminar—3 hours; term paper. Prerequisite: two undergraduate courses in Chicana/o Studies or consent of instructor. Examination of Chicano/Latino political experiences. Evaluate theories, ideology, and practice of Chicano politics. Brief history of Chicano/Latino/Hispanic political activity, comparison among political modes, gendered politics, and understanding relationships among Chicano, Mexican, American and world politics. Offered irregularly—Chabram (change in existing course—eff. spring 15)

Chinese

New and changed courses in Chinese (CHN)

Lower Division

1. Elementary Chinese (5)
Lecture/discussion—5 hours. Prerequisite: no background in Chinese or placement exam or consent of instructor. Developing elementary level skills of listening, speaking, reading and writing in Mandarin Chinese in everyday communication settings. Introduction of fundamentals of pronunciation, grammar, and Chinese script introduced. GE credit: ArtHum | AH, OL, WE—F, W, S (F, W, S) (change in existing course—eff. fall 16)

1A. Accelerated Intensive Elementary Chinese (15)
Lecture/discussion—15 hours. Prerequisite: no background in Chinese or placement exam or consent of instructor. Introduction and practice in contexts of pronunciation, speaking, playing, reading and writing Mandarin Chinese in everyday communication settings. Continuation of introduction of basic vocabulary and characters as well as core grammar, and further train pronunciation. GE credit: ArtHum | AH, OL, WE—F, W, S (F, W, S) (change in existing course—eff. spring 16)

1BL. Accelerated Written Chinese I (5)
Lecture—5 hours. Prerequisite: placement exam or consent of instructor. Continuation of course 1CN. GE credit: ArtHum | AH, OL, WE—S (S) (change in existing course—eff. spring 16)

2BL. Accelerated Written Chinese II (5)
Lecture—5 hours. Prerequisite: course 1BL or placement exam or consent of instructor. Further trainings in the communicative skills of listening, speaking, reading, and writing for students who already have elementary level ability to understand or speak Mandarin Chinese. GE credit: ArtHum | AH, OL, WE—F, W, S (F, W, S) (change in existing course—eff. spring 16)

3. Elementary Chinese (5)
Lecture/discussion—5 hours. Prerequisite: course 2 or placement exam or consent of instructor. Continuation of elementary level skill development in listening, speaking, reading and writing Mandarin Chinese in everyday communication settings. Continuation of introduction of basic vocabulary and characters as well as core grammar, and further train pronunciation. GE credit: ArtHum | AH, OL, WE—F, W, S (F, W, S) (change in existing course—eff. spring 16)

2CN. Mandarin for Cantonese Speakers II (5)
Lecture—5 hours. Prerequisite: course 2CN or placement exam or consent of instructor. Continuation of course 1CN. GE credit: ArtHum | AH, OL, WE—S (S) (change in existing course—eff. spring 16)

3BL. Accelerated Written Chinese III (5)
Lecture—5 hours. Prerequisite: course 2BL or placement exam or consent of instructor. Continuation of course 2BL with further trainings on all the communicative skills of listening, speaking, reading, and writing with emphases on standard Mandarin pronunciation, Chinese characters, and discourse level conversations in more communication settings. Not open for credit to students who have completed course 28. GE credit: ArtHum | AH, OL, WE—F, W, S (F, W, S) (change in existing course—eff. spring 16)

3CN. Mandarin for Cantonese Speakers III (5)
Lecture—5 hours. Prerequisite: course 2CN or placement exam or consent of instructor. Continuation of course 2CN. GE credit: ArtHum | AH, OL, WE—S (S) (change in existing course—eff. spring 16)
4. Intermediate Chinese (5)
Lecture/discussion—5 hours. Prerequisite: course 3; or placement exam or consent of instructor. Continuation of intermediate-level communication skills in spoken and written Chinese in cultural and communicative contexts, based on language skills developed in course 3. GE credit: ArtHum | AH, OL, WC.—F (W). [change in existing course—eff. spring 16]

5. Intermediate Chinese (5)
Lecture/discussion—5 hours. Prerequisite: course 5; or placement exam or consent of instructor. Training continues at intermediate-level in spoken and written Chinese in cultural contexts, based on language skills developed in course 5. GE credit: ArtHum | AH, OL, WC.—W (W). [change in existing course—eff. spring 16]

6. Intermediate Chinese (5)
Lecture/discussion—5 hours. Prerequisite: course 5; or placement exam or consent of instructor. Intermediate-level training in spoken and written Chinese in cultural contexts, based on language skills developed in course 5. GE credit: ArtHum | AH, OL, WC.—S (S). [change in existing course—eff. spring 16]

7. Chinese Business Culture (4)
Lecture/discussion—4 hours. Prerequisite: consent of instructor. Open to non-heritage students who have no prior knowledge of Chinese language or history. Reading and discussion of short stories and novels of two films. Designed to convey a feeling for what China has experienced in the twentieth century. Not open for credits to students who have already taken, or are taking concurrently, course 104. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen [change in existing course—eff. summer 15]

10. Modern Chinese Literature (In English) (4)
Lecture—3 hours; term paper or discussion—1 hour. Introductory course requiring no knowledge of Chinese language or history. Reading and discussion of short stories and novels of two films. Designed to convey a feeling for what China has experienced in the twentieth century. Not open for credits to students who have already taken, or are taking concurrently, course 104. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen [change in existing course—eff. summer 15]

11. Great Books of China (in English) (4)
Lecture—3 hours; discussion—1 hour. Selected readings in English translation are supplemented with background information on periods, authors and the interrelationships of culture, literature and social change. Methods of analysis are introduced and applied in class discussions. GE credit: ArtHum, Div, Wrt | AH, WC.—Halperin [change in existing course—eff. summer 15]

50. Introduction to the Literature of China and Japan (4)
Lecture/discussion—4 hours. Methods of literary analysis and their application to major works from the various genres of Chinese and Japanese literature (in translation), including film. East Asian cultural traditions will also be introduced. (Same course as Japanese 5.) GE credit: ArtHum, Div, Wrt | AH, WC.—Gundy [change in existing course—eff. summer 15]

Upper Division

100A. Chinese Intellectual Traditions: Daoist Traditions (4)
Lecture/discussion—4 hours. Prerequisite: a course in Chinese history recommended. English-language survey of key Daoist texts and scholarship. Topics include Daoist concepts of the cosmos, the natural world, scripture, the body, and immortality; Daoist divinities; Daoism and the state. (Same course as Religious Studies 175A) GE credit: ArtHum, Div, Wrt | AH, WC.—Chen [change in existing course—eff. spring 16]

100B. Confucian Traditions (4)
Lecture/discussion—4 hours. Key aspects of the Confucian tradition in dynastic China. Major themes addressed include ritual, classical studies, and Confucian influences on the Chinese family and state. GE credit: ArtHum, Div, Wrt | AH, WC.—Halperin [new course—eff. fall 14]

101. Chinese Film (4)
Lecture/discussion—3 hours; film viewing—3 hours. English language survey of Chinese film, from its inception to the end of the twentieth century. Chinese films as important texts for understanding national, transnational, race, gender, and class politics of modern China. (Same course as Cinema & Technological Cultures 147A) GE credit: ArtHum, Div | AH, VL, WC.—Chen [change in existing course—eff. spring 16]

102. Chinese American Literature (in English) (4)
Lecture—3 hours; term paper or discussion—1 hour. English language survey of Chinese American literature which reflects cultural roots in China before immigration and the diaspora experience in the United States after immigration. Memory, nostalgia, national identities, cross-cultural communication, globalization, and trans-national politics. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen [change in existing course—eff. spring 16]

103. Modern Chinese Drama (4)
Lecture—3 hours; term paper or discussion—1 hour. English language survey of modern Chinese spoken drama in the twentieth century and its major playwrights, in the context of Chinese history and the interaction of Chinese culture with other cultures. GE credit: ArtHum, Div, Wrt | AH, VL, WC.—Chen [change in existing course—eff. spring 16]

104. Modern Chinese Fiction (in English) (4)
Lecture—3 hours; term paper or discussion—1 hour. English language survey of Chinese fiction as it evolved amidst the great historical, social and cultural changes of the twentieth century. Thorough study of the most influential writers and genres. GE credit: ArtHum, Div, Wrt | AH, VL, WC.—Chen [change in existing course—eff. spring 16]

105. Western Influences on Twentieth-Century Chinese Literature (in English) (4)
Lecture—3 hours; discussion—1 hour. Introduction of Western literary thought into modern China, the experimentation with Western literary forms and techniques, and the development of Marxism in contemporary literary writing. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WC. [change in existing course—eff. spring 16]

106. Chinese Poetry (in English) (4)
Lecture—3 hours; discussion—1 hour. Organized topically and chronologically, the lyric tradition is explored from the dawn of folk songs to modern expressions of social protest. Topics include friendship, love, oppression, war, parting, death, ecstasy and beauty. All readings are in English. GE credit: ArtHum, Div, Wrt | AH, WC.—Yeh [change in existing course—eff. spring 16]

107. Traditional Chinese Fiction (in English) (4)
Lecture—3 hours; discussion—1 hour. English-language course studying the dawn of Chinese fiction and its development down to modern times. Continuous survey history with close reading of representative works such as The Story of the Stone and famous Ming-Qing short stories. GE credit: GE credit: ArtHum, Div, Wrt | AH, WC.—Halperin, He [change in existing course—eff. spring 16]

108. Poetry of China and Japan (in English) (4)
Lecture—3 hours; discussion—1 hour. A comparative approach to Chinese and Japanese poetry, examining poetic practice in the two cultures; includes a general outline of the two traditions, plus study of poetic forms, techniques, and distinct treatments of universal themes: love, nature, war, etc. (Same course as Japanese 108.) GE credit: ArtHum, Div, Wrt | AH, WC.—Yeh [change in existing course—eff. winter 15]

109A. Topics in Chinese Literature; Crime and Punishment (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; crime and punishment. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109C. Topics in Chinese Literature; Women Writers (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; women writers. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109D. Topics in Chinese Literature; The Knight-Errant (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature, the knight-errant. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109E. Topics in Chinese Literature; The City in Fiction (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; the city in fiction. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109G. Topics in Chinese Literature; The Literature of Twentieth-Century Taiwan (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; the literature of twentieth-century Taiwan. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109H. Topics in Chinese Literature; Popular Literature (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; popular literature. GE credit: ArtHum, Div, Wrt | AH, WC.—(S) Chen, Halperin, Yeh [change in existing course—eff. spring 16]

109I. Topics in Chinese Literature; Scholar & The Courtesan (in English) (4)
Lecture—3 hours; discussion—1 hour. Topics in Chinese literature; the scholar and the courtesan. GE credit: ArtHum, Div, Wrt | AH, WC.—Chen, Halperin, Yeh [change in existing course—eff. spring 16]
110. Great Writers of China: Texts and Context (in English) (4) Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Examination of major theoretical concepts and interpretive methods in the study of literature by using examples from the Chinese tradition. Discussions of classical and modern works with an emphasis on the relations between literature, author, society, and culture. GE credit: ArtHum, Div, Wrt | AH, WC. —Yeh, He (change in existing course—eff. spring 16)

111. Modern Chinese: Reading and Discussion (12) Lecture—3 hours; discussion—1 hour. Prerequisite: course 6 or placement exam or consent of instructor. Building on Chinese 6/3B/3L, further development of communication skills in Modern Standard Mandarin-speaking environments. Reading of dialogues/articles pertaining to contemporary China. GE credit: ArtHum | AH, OL, WC. —F, Su. (change in existing course—eff. spring 16)

112. Modern Chinese: Reading and Discussion (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 111 or placement exam or consent of instructor. Continuation of course 111. Further development of communication skills in Modern Standard Mandarin-speaking environments. Reading dialogues/articles pertaining to contemporary China issues and discussion of moral, aesthetic, social, and cultural concerns. Study strategies for moving between simplified and traditional Chinese characters. GE credit: ArtHum | AH, OL, WC. —W, W. (change in existing course—eff. spring 16)

113. Modern Chinese: Reading and Discussion (4h) Lecture—3 hours; course 112 or placement exam or consent of instructor. Continuation of course 112. Further development of communication skills in Modern Standard Mandarin-speaking environments. Read dialogues/articles pertaining to contemporary China issues and discussion of moral, aesthetic, social, and cultural concerns. Study strategies for moving between simplified and traditional Chinese characters. GE credit: ArtHum | AH, OL, WC. —S. (S.) (change in existing course—eff. spring 16)

114. Introduction to Classical Chinese (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 112 or equivalent language proficiency; consent of instructor. Introduction to the language in which, until the twentieth century, most official, documented, scholarly, and belletristic Chinese literature was written. GE credit: ArtHum | AH, WC. —F, S. (F, S). Halperin, He (change in existing course—eff. spring 16)

115. Introduction to Classical Chinese II (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 114 or consent of instructor. Continuation of enhancing classical Chinese reading skills with literature ranging from the prose found in Han dynasty historical works, Six Dynasties canonical literature, and Tang occasional texts, as well as the poetic shi and fu genres. GE credit: ArtHum | AH, WC. —Halperin, He (change in existing course—eff. spring 16)

116. Introduction to Classical Chinese III (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 115 or consent of instructor. Translations of extended readings in the original sources and brief analyses of syntax. These sources will include texts written by well-known figures from the eighth through fifteenth centuries, composing in a wide variety of genres. GE credit: ArtHum | AH, WC. —Halperin, He (change in existing course—eff. spring 16)

120. Advanced Chinese (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 113 or placement exam or consent of instructor. Examination of readings from various genres (literature, newspapers, TV and movies, etc.) with advanced reading, writing, aural comprehension, and formal/professional speech skills in Mandarin Chinese. GE credit: ArtHum | AH, OL, WC. —Yeh (change in existing course—eff. spring 16)

130. Readings in Traditional Chinese Fiction (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 111 or equivalent language proficiency. Examination of representative works of traditional Chinese fiction, spanning the 12th Century until the 17th and 18th centuries. Translations in English of the Chinese texts will be available to students as reference. May be repeated one time for credit. GE credit: ArtHum | AH, OL, WC. —F. (F, W, S.) (change in existing course—eff. spring 16)

131. Readings in Traditional Chinese Poetry (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 111 or equivalent language proficiency; consent of instructor. Traditional Chinese poetry from its beginnings to the golden ages of Tang and Song, surveying the development from early essays on selected topics of Chinese culture and society to the modern period. GE credit: ArtHum | AH, WC. —Yeh (change in existing course—eff. spring 16)

132. Readings in Modern Chinese Poetry (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 111 or equivalent language proficiency; consent of instructor. Chinese poetry from the Literary Revolution of 1917 to the present, surveying works that embody exciting innovations and reflect the modernity of twentieth-century Chinese society and culture. GE credit: ArtHum | AH, WC. —Yeh (change in existing course—eff. spring 16)

133. Readings in Modern Chinese Prose and Drama (4) Lecture—4 hours. Prerequisite: course 111 or equivalent language proficiency. Literary works and scholarly essays on selected topics of Chinese prose and drama, development of a deep understanding of Chinese culture and society through sophisticated reading materials of these two important genres of the modern period. Conducted in Chinese. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, WC. —Yeh (change in existing course—eff. spring 16)

134. Chinese Film in Chinese Language (4) Lecture—3 hours; film viewing—3 hours. Prerequisite: course 111 or equivalent language proficiency. Chinese film placement exam or consent of instructor. Chinese film and scholarly essays on Chinese cinema and film history. Develop a deep understanding of Chinese culture and society through viewing and studying Chinese films in the Chinese language. GE credit: ArtHum or SocSci | AH or SS, OL, VL, WC. —Chen (change in existing course—eff. spring 16)

150. Fifth-Year Chinese: Selected Topics in Chinese Language, Literature, and Culture (4) Lecture/discussion—4 hours. Prerequisite: course 120 or placement exam or consent of instructor. Examination of literary works and scholarly essays on selected topics of Chinese culture and society. Development of a deep understanding of Chinese culture and society through sophisticated Chinese speaking and writing exercises. May be repeated three times for credit when topic differs. Offered irregularly. GE credit: ArtHum, Div, Wrt | AH, OL, WC. —He, He (change in existing course—eff. spring 16)

160. The Chinese Language (4) Lecture/discussion—4 hours. Prerequisite: course 6 or 3B/3L or 3C/3L (can be concurrent) or placement exam or consent of instructor; Linguistics 1 recommended. Evaluation of the Chinese language viewed in its linguistic context, synchronically and diachronically. Historical phonology, classical and literary language, rise of written vernacular, descriptive grammar of modern standard Chinese, dialectal variation, and sociolinguistic factors. GE credit: ArtHum | AH, WC. —Chu (change in existing course—eff. spring 16)

194H. Special Study for Honors Students (1-5) Independent study—3-1.5 hours. Prerequisite: senior standing and qualification for the Chinese honors program; consent of instructor. Guided research, under the direction of a faculty member, leading to a senior honors thesis on a topic in Chinese literature, civilization, or language studies. May be repeated up to eight units for credit. (P/NP grading only.) GE credit: ArtHum | AH, WC. —F, W, S. (F, W, S.) (new course—eff. fall 14)

197T. Tutoring in Chinese (1-5) Tutoring—1-5 hours. Prerequisite: consent of Department. Leading of small voluntary discussion groups affiliated with one of the Department’s regular courses. May be repeated for credit, but only 2 units may be applied to the minor. (P/NP grading only.) —F, W, S. (F, W, S.) Chu (change in existing course—eff. spring 16)

Professional

396. Teaching Assistant Training Practicum (1-4) Prerequisite: consent of instructor; graduate standing. Any course taught by a graduate student under the direction of the Director. May be repeated for credit. (S/U grading only.) —F, W, S. (F, W, S.) Chu (change in existing course—eff. spring 16)

Cinema & Technocultural Studies

New and changed courses in Cinema & Technocultural Studies (CTS)

Lower Division

40A. Media History 1, Gutenberg to Oppenheimer (4) Lecture—3 hours; discussion—1 hour; film viewing—2 hours, extensive writing. History of Media to 1945, with particular focus on mechanically repro
duced mass media technologies including the printing press, the newspaper, photography, cinema, radio and telecommunication technology. Analysis of inter-related cultural and political topics. (Same Course As: Science and Technology Studies 40A.) GE credit: ArtHum or SocSci | AH or SS, OL, VL, WE.—F, —F (F) (new course—eff. fall 14)

40B. Media History 2 1945-Present (4)
Lecture—3 hours; discussion—1 hour; film viewing—2 hours; extensive writing. Prerequisite: course 40A. History of media from 1945 to present, with particular focus on the development of the computer, digital network and internet technologies in the context of other media infrastructures like radio, television and satellite networks. Analysis of inter-related cultural/political topics. (Same course as Science & Technology Studies 162.) GE credit: ArtHum or SocSci | AH or SS, OL, VL, WE.—F, —F (F) (new course—eff. winter 15)

41A. History of Cinema from 1895 to 1945 (4)
Lecture—2 hours; discussion—1 hour; film viewing—3 hours; extensive writing. Examination of the cultural context of the emergence of cinema. Discussion of cinema as a product of the age of industrialization and conquest, as well as an element of urban culture, and mass transportation. GE credit: ArtHum | AH, OL, VL, WC, WE. (new course—eff. fall 14)

41B. History of Cinema from 1945 to the present (4)
Lecture—2 hours; discussion—1 hour; film viewing—3 hours; extensive writing. Examination of cinema in the postwar period. Study of world cinema trends and the economic and socio-political conditions enabling innovative work in the film industry. GE credit: ArtHum | AH, OL, VL, WC, WE. (new course—eff. fall 14)

124E. Costume Design for Film (4)
Lecture/discussion—4 hours. Prerequisite: for Dramatic Art majors; Dramatic Art 24 or 124D or consent of instructor. Theory and practice of the art and business of film costume design. Script analysis, costume research, developing design concepts, budgeting, and current production practices and methods. Execution of designs for period and contemporary films. Viewing of current films. (Same course as Dramatic Art 124E.) GE credit: ArtHum | AH, OL, VL—W (W). Morgan (new course—eff. winter 14)

144B. Japanese Literature on Film (4)
Lecture/discussion—3 hours; film viewing—3 hours. Survey of films based on works of Japanese literature, emphasis on pre-modern and early modern texts. Introduction to major directors of Japan, with a focus on cinematic adaptation. Lectures and readings in English. Films in Japanese with English subtitles. (Same course as Japanese 156.) Offered in alternate years. GE credit: ArtHum, Div, Writ | AH, VL, WE.—F (S) Sorensen (new course—eff. winter 16)

162. Surveillance Technologies and Social Media (4)
Lecture—3 hours; film viewing—3 hours; term paper. Prerequisite: Technocultural Studies 1 or course 20D. Study of the ubiquitous presence of CCTV, face recognition software, global tracking systems, biosensors, and data mining practices that have made surveillance part of our daily life. Exploitation of the boundary between security and control. History of technological surveillance and alternative political movements. Critical approaches to the study of video games, focusing on formal, historical, and cultural modes of analysis. History of software and hardware in North American and global contexts. Relations of games to society, politics, economics, literature, media, and the arts. (Same course as Science and Technology Studies 172 and English 172.) GE credit: ArtHum or SocSci | ACGH, AH or SS, VL. (change in existing course—eff. spring 15)

174. Acting for Camera (4)
Lecture/workshop—6 hours. Prerequisite: consent of instructor. Analysis and practice of acting skills required for camera work and digital media. May be repeated eight times for credit when instructor differs. (Same course as Dramatic Art 174.)—S (S) Anderson (change in existing course—eff. summer 15)

172. Video Games and Culture (4)
Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: Technocultural Studies 1 or English 3 or Science and Technology Studies 1 or equivalent. Critical approaches to the study of video games, focusing on formal, historical, and cultural modes of analysis. History of software and hardware in North American and global contexts. Relations of games to society, politics, economics, literature, media, and the arts. (Same course as Science and Technology Studies 172 and English 172.) GE credit: ArtHum or SocSci | ACGH, AH or SS, VL. (change in existing course—eff. spring 15)

20. Pompeii AD 79 (4)
Lecture—3 hours; term paper. Roman life in an urban community at the time of the eruption of Vesuvius. Slide presentations of the archeological evidence will be supplemented by selected readings from Petronius’ Satyricon and other ancient authors. GE credit: ArtHum, Writ | AH, VL, WC, WE. (change in existing course—eff. spring 15)

25. The Classical Heritage in America (4)
Lecture/discussion—3 hours; term paper. Classical heritage in the New World, with emphasis on the United States from its colonial past to the present day. The reception of Greco-Roman thought and values as expressed in art, architecture, education, law, government, literature, and film. Offered irregularly. GE credit: ArtHum, Writ | ACGH, AH, WE. (change in existing course—eff. spring 15)

30F. Greek and Latin Elements in English Vocabulary (3)
Lecture—3 hours. Restricted to incoming freshmen. Knowledge of Latin and Greek not required. Elements of Greek and Latin vocabulary for increased understanding of English word formation and improved ability to understand and retain unfamiliar words. Emphasis on Greek and Latin roots but other languages not neglected. Not open for credit to students who have completed course 30. GE credit: ArtHum | AH. —F (F) Albu, Brelinski, Popescu, Rundin (change in existing course—eff. spring 15)

31. Greek and Latin Elements in Technical Vocabulary (3)
Lecture—3 hours. Knowledge of Greek and Latin not required. Elements of Greek and Latin vocabulary to increase understanding of English word formation in medical, scientific and technical terminology and improve ability to understand and retain unfamiliar terms. GE credit: ArtHum | AH. (change in existing course—eff. spring 15)

50. The Rise of Science in Ancient Greece (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Mathematics 16A or the equivalent. Study of the emergence of scientific rationality in ancient Greece and its political and social context; concentration on four areas: mathematics, medicine, cosmology, and psychology. Reading from the Presocratics, Hippocrates, Plato, Aristotle, and Hellenistic philosophers. GE credit: ArtHum, Writ | AH, WC, WE.—Webster (change in existing course—eff. spring 15)

101A. Topics in Ancient Mediterranean Civilizations (4)
Lecture/discussion—3 hours; term paper. Prerequisite: one course in Classics, Latin or Greek or consent of instructor. Topics may be ordered by time or place [e.g. Hellenistic Egypt] or by theme or genre [e.g. slavery in the ancient world]. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, WC, WE.—Albu (change in existing course—eff. spring 15)

101B. Topics in Greek Civilization (4)
Lecture/discussion—3 hours; term paper. Prerequisite: one course in Classics, Latin or Greek or consent of instructor. Topics may be ordered by time or place [e.g. the world of Homer] or by theme or genre [e.g. the Greek art of war]. May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, WC, WE.—Albu, Webster (change in existing course—eff. spring 15)

101C. Topics in Roman Civilization (4)
Lecture/discussion—3 hours; term paper. Prerequisite: one course in Classics, Latin or Greek or consent of instructor. Topics may be ordered by time or place [e.g. Julius Caesar and his age] or by theme

Lecture—3 hours; discussion—1 hour. Introduction to the history, literature, material culture, political and social institutions and values of Roman Civilization, with an emphasis on the development of the Roman Empire and the interactions of Roman culture with other Mediterranean cultures. GE credit: ArtHum | AH, WE, WC.—Stem (change in existing course—eff. spring 15)

10. Greek, Roman, and Near Eastern Mythology (3)
Lecture—3 hours. Examination of major myths of Greece, Rome, and the Ancient Near East, their place in the religion, literature and art of the societies that produced them; their subsequent development, influence, and reception. GE credit: ArtHum | AH, VL, WE.—Rundin, Seal, Stem, Uhlig (change in existing course—eff. spring 15)

15. Women in Classical Antiquity (4)
Lecture/discussion—3 hours; term paper. Lives and roles of women and men in ancient Greece and Rome. Readings from history, philosophy, medical and legal documents, literature and myth. Offered irregularly. GE credit: ArtHum | AH, VL, WC, WE.—Popescu, Seal (change in existing course—eff. spring 15)

AGCH=American Cultures; DD=Domestic Diversity; OL=Oral Skills; QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience Quarter Offered: F=Fall, W=Winter, S=Spring, SU=Summer; 2015-2016 offering in parentheses
101D. Topics in Classical Receptions (4)
Lecture/discussion—3 hours; term paper. Prerequisite: one course in Classics or consent of instructor. Topics in classical reception from late antiquity to the present. Topics may be ordered by time or place (e.g. the classical tradition in Washington, D.C.) or by theme or genre (e.g. cinematic representations of the ancient world). May be repeated two times for credit when topic differs. GE credit: ArtHum | AH, WC, WE—Albu (change in existing course—eff. spring 15)

102. Film and the Classical World (4)
Lecture—3 hours; film viewing—2.5 hours. Prerequisite: any Classics course except 30 or 31. The Classical World as portrayed in films. Viewings and discussions of modern versions of ancient dramas, modern adaptations of the ancient world, and films imbued with classical themes and allusions. Supplementary readings in ancient literature and mythology. GE credit: ArtHum, Writ | AH, WE, WC—Seal (change in existing course—eff. spring 15)

110. Origins of Rhetoric (4)
Lecture—3 hours; term paper. Prerequisite: one course in ancient history or consent of instructor. Issues in the development of rhetoric from its origins in ancient Greece to A.D. 430. Special attention to works of Plato, Aristotle, Cicero, and Quintilian. Role of grammar and rhetoric in schools of Roman Empire. The Christian rhetoric of Saint Augustine. Not open for credit to students who have completed RHET 111. GE credit: ArtHum, Writ | AH, WE, WC—Popescu (change in existing course—eff. spring 15)

120. Greek and Roman Historiography (4)
Lecture/discussion—3 hours; term paper. Survey of Greek and Roman historical writing in English translation. Authors to be read may include Herodotus, Thucydides, Sallust, Polybius, and Tacitus. Focus on the development of historical writing as a literary genre. GE credit: ArtHum | AH, WC, WE—Seal (change in existing course—eff. spring 15)

125. Roman Political Thought (4)
Lecture—3 hours; term paper. Survey of Roman thinking about politics, as expressed both in formal theory and in a variety of other contexts, including oratory, historiography, and epic. Study of Roman political reflection in its historical, cultural, and literary context. GE credit: ArtHum | AH, WC, WE—Seal (change in existing course—eff. spring 15)

140. Homer and Ancient Epic (4)
Lecture/discussion—3 hours; term paper. Prerequisite: a lower division Classics course or consent of instructor. Reading of the classical epics of Homer (Iliad, Odyssey) and Virgil (Aeneid) in English. Discussion of the origins and development of the major monuments of Greek art and architecture of the eighth century to the mid-fifth century B.C. (Same course as Art History 172A.) GE credit: ArtHum, Writ | AH, WE, VL—Roller (change in existing course—eff. spring 15)

141. Greek and Roman Comedy (4)
Lecture—3 hours; conference—1 hour. Readings in Aristophanes, Menander, Plautus, and Terence; lectures on the development of ancient comedy. GE credit: ArtHum, Writ | AH, WE—Popescu (change in existing course—eff. spring 15)

142. Greek and Roman Novel (4)
Lecture—3 hours; term paper. Prerequisite: a lower division Classics course or consent of instructor. Examination of the ancient Greek romances and their development into the grotesque realism of Petronius’ Satyricon, and the religious mysticism of Apuleius’ The Golden Ass. GE credit: ArtHum, Writ | AH, WC, WE—S. (J) Popescu (change in existing course—eff. spring 16)

143. Greek Tragedy (4)
Lecture/discussion—3 hours; term paper. Prerequisite: a lower division Classics course or consent of instructor. Reading in English of selected plays of Aeschylus, Sophocles, and Euripides. Discussion of the development and influence of Athenian tragedy. GE credit: ArtHum, Writ | AH, WE, WC—F. W. S. (J) Popescu (change in existing course—eff. spring 16)

150. Socrates and Classical Athens (4)
Lecture/discussion—3 hours; term paper. Prerequisite: a lower division Classics course or consent of instructor. Study of the major sources of our knowledge of Socrates, assessment of his role in the politics and culture of ancient Athens, his method of teaching, and his influence on Western thought. GE credit: ArtHum | AH, WC, WE—F. W. S. (J) Popescu (change in existing course—eff. spring 16)

171. Mediterranean Bronze Age Archaeology (4)
Lecture—3 hours; extensive writing. Prerequisite: a lower division Classics course or consent of instructor. Archaeological advances of the ancient Near East, including Egypt and Mesopotamia, and of Greece and Crete during the Bronze Age. Special emphasis on the problems of state formation and on the existence and collapse of Bronze Age societies. GE credit: ArtHum, Div, Writ | AH, WC—F. W. S. (J) Popescu (change in existing course—eff. spring 16)

172A. Early Greek Art and Architecture (4)
Lecture—3 hours; term paper. Examination of the origins and development of the major monuments of Greek art and architecture of the eighth century to the mid-fifth century B.C. (Same course as Art History 172A.) GE credit: ArtHum, Writ | AH, VL, WE—Roller (change in existing course—eff. spring 15)

172B. Later Greek Art and Architecture (4)
Lecture—3 hours; term paper. Study of the art and architecture of fifth and fourth century B.C., from the mid-fifth century to the first century B.C. (Same course as Art History 172B.) GE credit: ArtHum, Writ | AH, VL, WE—Roller (change in existing course—eff. spring 15)

173. Roman Art and Architecture (4)
Lecture—3 hours; term paper. Art and architecture of Rome and the Roman Empire, from the founding of Rome through the fourth century C.E. (Same course as Art History 173.) GE credit: ArtHum, Writ | AH, VL, WE—Roller (change in existing course—eff. spring 15)

174. Greek Religion and Society (4)
Lecture—3 hours; term paper. Prerequisite: a lower division Classics course or consent of instructor. Cults, festivals, and rituals of Greek religious practice and their relationship to Greek social and political institutions, and to Greek private life. Includes discussion of major sanctuaries at Olympia, Delphi, Athens, and other sites. GE credit: ArtHum, Writ | AH, WE, WC—F. W. S. (J) Popescu (change in existing course—eff. spring 16)

175. Architecture and Urbanism in Mediterranean Antiquity (4)
Lecture—3 hours; extensive writing. Prerequisite: a lower division course (except 30, 31); Art History 1A recommended. Architecture and urban development in the ancient Near East, Greece, and Rome. Special emphasis on the social structure of the ancient city as expressed in its architecture, and on the interaction between local traditions and the impact of Greco-Roman urbanism. (Same course as Art History 175.) GE credit: ArtHum, Div, Writ | AH, VL, WE, WC—Roller (change in existing course—eff. spring 15)

190. Senior Seminar (4)
Seminar—3 hours; term paper. Prerequisite: completion of one upper division course in Latin, Greek or Hebrew or consent of instructor. Advanced interdisciplinary study of a problem in the ancient Mediterranean world using the techniques of history, archaeology, art history and philology. May be repeated for credit with consent of instructor. GE credit: ArtHum, Writ | AH, WE—Roller (change in existing course—eff. spring 15)

194HA. Special Study for Honors Students (3)
Seminar—3 hours; discussion—1 hour; independent study; term paper. Prerequisite: admission to the honors program and consent of faculty member supervising honors thesis. Directed reading, research and writing culminating in the completion of a senior honors thesis under the direction of faculty adviser. (Deferred grading only, pending completion of sequence. P/NP grading only.) GE credit: AH—F, W, S (F, W, S.) (change in existing course—eff. summer 15)

194HB. Special Study for Honors Students (3)
Seminar—3 hours; discussion—1 hour; independent study; term paper. Prerequisite: admission to the honors program and consent of faculty member supervising honors thesis. Directed reading, research and writing culminating in the completion of a senior honors thesis under the direction of faculty adviser. (Deferred grading only, pending completion of sequence. P/NP grading only.) GE credit: AH—W, S (W, S.) (change in existing course—eff. summer 15)

Graduate

200A. Approaches to the Classical Past (4)
Seminar—3 hours; term paper. Prerequisite: graduate student status or consent of instructor. Survey of major areas of classical scholarship, with special emphasis on the continuing impact of Mediterranean antiquity on later literature, history, art, and culture. GE credit: AH—F, W, S (F, W, S.) Albu (change in existing course—eff. spring 16)

200B. Approaches to the Classical Past (4)
Independent study—4 hours. Prerequisite: course 200A and graduate student status or consent of instructor. Restricted to graduate students. Research project on major area of Classical scholarship, with special emphasis on the continuing impact of Mediterranean antiquity on later literature, history, art, and culture. GE credit: AH—W, S (F, W, S.) Albu (change in existing course—eff. spring 16)

201. Introduction to Classical Philology (4)
Seminar—3 hours; term paper. Survey of major contemporary areas of classical scholarship with special attention devoted to current problems in literary and textual criticism. GE credit: AH—F, W, S (F, W, S.) Albu (change in existing course—eff. spring 16)

202. Homer (4)
Seminar—3 hours; term paper. Readings in the Iliad and Odyssey: the origins and transmission of the poems. GE credit: AH—F, W, S (F, W, S.) Albu (change in existing course—eff. spring 16)
Clinical Research

New and changed courses in Clinical Research (CLH)

Graduate

202. Introduction to Clinical Epidemiology and Study Design (3)
Lecture—25 hours; discussion—10 hours. Prerequisite: completed one of the following: MD, DDS, DMD, OD, ND, DO, PharmD, DVM, PhD or DNS in nursing; application and acceptance into the Clinical Research Graduate Group, K30 program, or other SOM/CTSC training programs. Anatomic and physiologic underpinnings of clinical epidemiologic research. Focus on three basic study designs [cross-sectional, case-control, and cohort]. Discuss the various measures of clinical epidemiologic research. Students will develop understanding for basic planning and analysis of clinical studies and learn to develop collaborations with biostatisticians. (Same course as Public Health Sciences 244.) May be repeated for credit. Offered in alternate years.

203. Methods in Clinical Research (3)
Lecture—4 hours; discussion—1 hour; independent study—10 hours. Prerequisite: completed one of the following: MD, DDS, DMD, OD, ND, DO, PharmD, DVM, PhD or DNS in nursing; application and acceptance into the Clinical Research Graduate Group, K30 program or other SOM training programs; consent of instructor. Overview of major approaches to clinical research, including health services research techniques, informatics, GCRC, and preclinical methodologies to enhance clinical projects. Overview of UCD clinical research support infrastructure. Methodologies applicable to clinical research and its multidisciplinary perspective. [S/U grading only.]

207. Team Science (1)
Lecture/discussion—1 hour. Prerequisite: participation in CTSC Research Education and Training Program, or consent of instructor. Restricted to 25 students. Today’s scientific challenges necessitate cross-disciplinary engagement and high collaboration levels. This course offers guidance on how best to engage in team science to pursue complex questions, work effectively with team members, and produce high impact research that meets society’s needs. [S/U grading only.] —S. (S.) Crumley, Meyers

208. Introduction to Grant Writing, I (2)
Lecture/discussion—2 hours; extensive writing. First in a two-quarter series. Students are encouraged to enroll in both classes. The two-course sequence provides training in practical aspects of competitive grant writing. The focus is NIH, but information will apply to other funding agencies. [S/U grading only.]—F. (F.) Chedin, Guo, Ozonoff

210Y. Principles and Methods of Comparative Effectiveness Research (4)
Web virtual lecture—4 hours; discussion—2 hours; project—6 hours; web electronic discussion. Prerequisite: familiarity with research methodology, and a course in introductory statistics; consent of instructor. Provides an introduction to Comparative Effectiveness Research (CER) and methods for conducting CER. [S/U grading only.]—S. (S.) Fancher, Krautz, Lehigh, Meinlowski, Romano, Tanevski

245. Biostatistics for Biomedical Science (4)
Lecture—4 hours. Prerequisite: course 244 or Public Health Sciences 244 or the equivalent; consent of instructor. Analysis of data and design of experiments for laboratory data. [Same course as Public Health Sciences 245.]—W. (W.) Kim

246. Biostatistics for Clinical Research (4)
Lecture—4 hours. Prerequisite: course 245 or Public Health Sciences 245. Emphasizes critical biostatistics for clinical research and targets biomedical audience. Students will develop understanding for basic planning and analysis of clinical studies and learn to develop collaborations with biostatisticians. (Same course as Public Health Sciences 246.) May be repeated for credit. Offered in alternate years.

247. Statistical Analysis for Laboratory Data (4)
Lecture—4 hours. Prerequisite: course 245 or Public Health Sciences 245. Statistical methods for experimental design and analysis of laboratory data including gene expression arrays, RNASeq, and mass spec. [Same course as Public Health Sciences 247.]—S. (S.) Rock

250. Integrating Medicine Into Basic Science (6)
Lecture—3.75 hours; discussion—6 hours; seminar—2.5 hours; clinical—8 hours. Prerequisite: consent of instructor. Graduate standing; acceptance into HMHI Integrating Medicine into Basic Science program. Four-week summer institute consisting of didactic lectures, reading assignments, group discussions, and clinical rotations to acculturate students to human medical environment; integrate medical principles, physiology and pathophysiology into basic research; introduce high-impact clinical studies related to medicine and health. [S/U grading only.]—S. (S.) Knowlton, Robbins, Stevenson

Communication

New and changed courses in Communication (CMN)

Lower Division

1. Introduction to Public Speaking (4)

10Y. Introduction to Communication (4)
Web virtual lecture—3 hours; discussion—1 hour. Basic principles of communication and communication research including interpersonal, intercultural, news, entertainment, mediated, and others. GE credit: SocSci | SS—F, W, S. [F, W, S, Su.] Taylor

76. Video Games and Virtual Environments (4)
Lecture—3 hours; discussion—1 hour. Impact of video games on players and society. Topics include motivations for playing games; cognitive, emotional, and behavioral effects, including violence and addiction; interpersonal and group processes in online games; virtual communities; and video games for education. GE credit: SocSci | SS, VL—F. (F.) Peña

98. Directed Group Study (1-5)
Prerequisite: consent of instructor. Restricted to lower division students. [P/NP grading only.]—F, W, S. [F, W, S]

Upper Division

102. Empirical Methods in Communication (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Statistics 13 or equivalent. Social scientific research methods commonly employed in Communication. Topics include research design, measurement, sampling, questionnaire construction, survey research, experimental design, evaluation research, content analysis and qualitative field methods. GE credit: SocSci | QL, SS—F, W, S. [F, W, S, F.] Bell, Palomares, Yegian

103. Gender Differences in Communication (4)
(canceled course—eff. summer 15)

110. Communication Networks (4)
Lecture/discussion—4 hours. Theoretical and practical approaches to communication networks, practical applications of network studies, and network analysis tools. Topics include friendship, political discussion, social support, organizational, social media, and disease transmission networks. Impact of emerging technologies on network creation, maintenance, and expansion. GE credit: SocSci | SS—F. (F.) Barnett, Shen

111. Gender Differences in Communication (4)
Lecture—4 hours. Pass One open to Communication majors only. Examination of communication differences between men and women as sources of male/female stereotypes, misunderstandings, dilemmas, and difficulties (real and imagined). Treatment of genders as cultures. Topics include male/female dif-
112. Theories of Persuasion (4)
Lecture/discussion—4 hours. Pass One open to Communication majors only. Theories and models of persuasion that account for the effects of source channel and audience factors on message recipients. Examination of message strategies for altering attitudes and gaining compliance. Contexts of application include interpersonal relationships, advertising, politics, and health. Not open for credit to students who have taken Communication 101. GE credit: SocSci | SS—F. (F, W) Palomares (new course—eff. fall 15)

114. Communication and Cognition (4)
Lecture—4 hours. Pass One open to Communication majors only. Relationship between communication and cognition in interpersonal and mediated contexts. Models of discourse comprehension and production, the influence of language attitudes on social judgments, and the development of information processing on decision making are explored. Not open to students who have completed course 138. GE credit: SocSci | SS—S. (S.) Yegiyantyan (change in existing course—eff. fall 15)

120. Interpersonal Communication (4)
Lecture—4 hours. Pass One open to Communication majors only. Theories and principles of interpersonal communication related to perception, verbal and nonverbal channels, mutual understanding, and relationship development. Communication processes in face-to-face and technologically-mediated encounters. Consideration of different relationship contexts, including friendships, dating, and family relationships, and the workplace. Not open for credit to students who have completed course 124. GE credit: SocSci | SS—F, W, S. (F, W, S.) Feng, Pucker (new course—eff. winter 16)

122. Nonverbal Communication (4)
Lecture—4 hours. Pass One open to Communication majors only. Examination of the interaction between nonverbal communication and verbal communication channels in influencing outcomes in interpersonal relationships. Underlying functions served by nonverbal communication are considered. Not open for credit to students who have completed course 135. GE credit: SocSci | SS—W, S. (W, S.) Pucker (new course—eff. fall 15)

123. Intercultural Communication (4)
Seminar—3 hours; term paper. Pass One open to Communication majors only. Major concepts and theories of intercultural communication. Topics include cultural similarities and differences in verbal and nonverbal communication; dimensions of cultural variations, barriers to intercultural communication, and intercultural communication competence. Not open for credit to students who have taken courses 197. GE credit: SocSci | SS—S. (S.) Feng (new course—eff. winter 16)

130. Group Communication (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Statistics 13 or equivalent. Communication processes in the development and maintenance of effective groups and teams in organizations. Examination of both face-to-face and computer-mediated group interaction. Topics include group development, power, norms, cohesion, decision making, problem solving, creativity, conflict management, working relationships, and leadership. GE credit: SocSci | SS—F. (F) (new course—eff. fall 14)

131. Strategic Communication in Public Relations (4)

134. Interpersonal Communication (4)
(cancelled course—eff. winter 16)

135. Nonverbal Communication (4)
(cancelled course—eff. fall 15)

137. Intercultural Communication (4)
(cancelled course—eff. winter 16)

138. Communication and Cognition (4)
(cancelled course—eff. summer 15)

140. Introduction to Mass Communication (4)
Lecture/discussion—4 hours. Prerequisite: course 101, 102 or equivalent. History of mass media and media research traditions. Organization and economics of the media industry. Media policy, law, regulation and the media on individuals and society. Traditional, new and emerging communication technologies. GE credit: SocSci | SS—F, W, S. (F, W, S, S.) Cho, Taylor, Yegiyantyan (change in existing course—eff. summer 15)

141. Media Effects: Theory and Research (4)
Lecture/discussion—4 hours. Prerequisite: course 101, 102 or equivalent course in research methods, and 140. Pass One open to Communication majors only. Social scientific studies of the effects of mass media messages on audience members’ actions, attitudes, beliefs, and emotions. Topics include the cognitive processing of media messages, television violence, political socialization, cultivation of beliefs, agenda-setting, and the impact of new technologies. GE credit: SocSci | SS—W, S. (W, S.) Cho, Taylor (change in existing course—eff. summer 15)

Lecture—4 hours. Prerequisite: course 101, 102 or equivalent course in research methods). 140. Pass One open to Communication majors only. Exploration of processes and constraints in the gathering, editing, and reporting of news. Examination of studies on the effects of news, contemporary challenges to news reporting presented by new technologies, and the relationship of news to other social institutions. GE credit: SocSci | ACGH, SS—F, W, S. Theobald (change in existing course—eff. summer 15)

146. Communication Campaigns (4)
Lecture/discussion—4 hours; term paper. Prerequisite: course 101; 102 or equivalent course in quantitative research methods. Pass One open to Communication majors only. Strategic uses of media and interpersonal communication channels in health, environmental advocacy, and political campaigns. Emphasis on general principles relevant to most campaign types, including public information, social marketing, and media advocacy campaigns. GE credit: SocSci | SS—S. (S.) Barnett, Theobald (change in existing course—eff. spring 16)

152. Theories of Persuasion (4)
(cancelled course—eff. fall 15)

170. Digital Technology and Social Change (4)
Lecture/discussion—4 hours. Conceptual understanding of how digital communication technologies transform our lives through social media, mobile connectivity, globalization, and big data. Contexts of applications include education, social entrepreneurship, democracy, and poverty. GE credit: SocSci | SS—S. (S.) Hilbert, Theobald (change in existing course—eff. summer 15)

170V. Digital Technology and Social Change (4)
Web virtual lecture—3 hours; web electronic discussion—1 hour. Conceptual understanding of how digital technologies transform our lives, through social media, mobile connectivity, globalization, big data, and artificial intelligence. Context of course include education, health, democracy, and poverty. Not open for credit to students who have completed course 170. GE credit: SocSci | SS—F, W, S, Su. (F, W, S, Su.) Hilbert (new course—eff. winter 16)

174. Social Media (4)
Lecture—4 hours. Application of theories of communication to the study and analysis of social media. Examination of social media in various contexts such as health, political movements, and collaboration. Topics include motivations for membership, participation, virality, social networks, and privacy. GE credit: SocSci | SS—W, S. (W, S.) Shen (new course—eff. fall 14)

189A. Proseminar in Social Interaction (4)
Seminar—3 hours; term paper. Prerequisite: course 101, 102, 136; consent of instructor. Open to Communication majors only. Reading, discussion, research, and writing on a selected topic in the specialty of social interaction. Potential topics include relationship initiation, maintenance, and deterioration; communication failure; nonverbal communication; conversational management; semantics and pragmatics of language and face-to-face communication. May be repeated for credit when topic differs. Offered in alternate years. GE credit: SocSci, Wrt | SS, WE—S. Feng, Palomares (change in existing course—eff. summer 15)

192. Internship in Communication (1-6)
Internship—3-18 hours. Prerequisite: consent of instructor. Open to Communication majors only. Supervised work experience requiring the application of communication principles and techniques in the evaluation of communication practices in a professional setting. Relevant experiences include public relations, advertising, sales, human resources, health promotion, political campaigns, journalism, and broadcasting. May be repeated up to 6 units of credit. (P/NP grading only.)—F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. fall 14)

Graduate

202. Communication Theory Construction (4)
Seminar—4 hours. Prerequisite: consent of instructor; graduate standing. Alternative meta-theoretical perspectives for theory generation in communication inquiry. Processes of construct explication, operation-alization, and theory construction. Emphasis on the critique of extant communication theories and the development of theory construction skills. Offered irregularly—S. Baranoff (change in existing course—eff. summer 15)

203. Scientific Methods for Communication (4)
Seminar—3 hours; term paper. Prerequisite: 201, 202, Psychology 204A, 204B or equivalent. Social scientific research methods commonly employed in Communication. Topics include research design
measurement sampling questionnaire construction survey research experimental design evaluation research content analysis and qualitative field method- ods. —S. (S.) Palomares, Yegianyan (change in existing course—eff. summer 15)

222. Risk Communication (4)
Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Theories and models of individual risk information processing. Media depictions of threats and risk-related information and their potential effects on audiences. Implications for the design and implementation of messages concerning threat and risk. Offered irregularly.—S. (S.)

(change in existing course—eff. summer 15)

230. Social Interaction Theory and Research (4)
Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Survey of theories and research on social interaction and interpersonal communication. Covers communication codes, individual differences in communication, communication and relationship development, family communication, conflict, cognitive and emotional processes underlying social interaction, social influence, intercultural communication and nonverbal behavior.—W. (W.) Feng, Palomares (change in existing course—eff. summer 15)

245. The Political Economy of Urban and Regional Development (4)
Seminar—3 hours. Prerequisite: graduate standing; consent of instructor. Survey of theories and research on the uses and effects of video games.—S. (S.) Barnett, Shen (canceled course—eff. fall 14)

251. Digital Technology and Social Change (4)
Seminar—3 hours; term paper. Conceptual, theoretical, and international consideration of how digital communication technologies transform social organization and development. Topics include social media, big data, political revolutions, e-democracy, digital divide, e-education, e-health, entrepreneurialism, public policies, poverty reduction, technological innovations, microfinance, and entertainment. Offered in alternate years.—W. (W.) Hilbert (new course—eff. spring 15)

253. Negotiation (4)
Seminar—3 hours; term paper. Conceptual, theoretical, and international consideration of how digital communication technologies transform social organization and development. Topics include social media, big data, political revolutions, e-democracy, digital divide, e-education, e-health, entrepreneurialism, public policies, poverty reduction, technological innovations, microfinance, and entertainment. Offered in alternate years.—F. (F.) Shen (new course—eff. fall 14)

255. Social Media (4)
Seminar—3 hours; term paper. Conceptual, theoretical, and international consideration of how digital communication technologies transform social organization and development. Topics include social media, big data, political revolutions, e-democracy, digital divide, e-education, e-health, entrepreneurialism, public policies, poverty reduction, technological innovations, microfinance, and entertainment. Offered in alternate years.—F. (F.) Shen (new course—eff. fall 14)

256. Communication Perspective on Video Games (4)
Seminar—3 hours; term paper. Research on the uses and effects of video games and virtual environments developed for entertainment and education. Study of the research methods available for documenting and measuring game use and effects on behavior. Offered in alternate years.—S. Peña, Shen (change in existing course—eff. summer 15)

259. Cognitive Approaches to Media (4)
Seminar—3 hours; term paper. Restricted to graduate standing. Interdisciplinary examination of cognitive approaches to mediated communication. Application of studies on mediated message processing, cognitive and emotional information processing, psychophysiology, and neuroscience to mass communication. Review of media research and methods on attention, memory, motivation, and limited capacity. Offered in alternate years.—W. Yegianyan (new course—eff. fall 14)

260. Communication Applications (2-4)
Seminar—3 hours; term paper. Communication processes by which information and innovation diffuse through social systems. Models of diffusion, including spatial, network, time dependent, semantic and cognitive frameworks. Impact of communication technologies on diffusion. Practical application of diffusion models in a variety of contexts. Offered in alternate years.—W. Barnett, Hilbert (new course—eff. spring 15)

271. Communication Networks (4)
Seminar—3 hours; term paper. Theoretical, conceptual, and analytic issues pertaining to network perspectives on communicating and organizing. Consideration of both structural and dynamic features of communication networks. Examination of the impact of emerging technologies on communication networks. Introduction to network analysis software.—S. (S.) Barnett, Shen (new course—eff. fall 14)

280. Special Topics in Social Interaction (4)
Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Reading, discussion, research, and writing on a selected topic in the specialty of social interaction. May be repeated for credit when topic differs. Offered irregularly.—S. Feng, Palomares (change in existing course—eff. summer 15)

Community and Regional Development

New and changed courses in Community and Regional Development (CRD)

Lower Division

118. Technology and Society (4)
Lecture—3 hours; discussion—1 hour; extensive writing; term paper. Historical and cultural survey of the role of various ethnic groups in the development of American communities. Examines economy as a cultural factor, ethnicity as power and issues related to selected American ethnic groups. Open to seniors only. GE credit: SocSci, Div, Wrt; 1 ACGR | SS, WE—F. (F.) S. Lipkin (change in existing course—eff. summer 15)

Upper Division

119. Institution and Technology (4)
Lecture—3 hours; discussion—1 hour; extensive writing; term paper. Examination of technology on low-income communities of color; histories, policies, and innovations associated environmental justice movements in the United States and around the world. Offered in alternate years. GE credit: SocSci, Div, Wrt | DD, OL, SS, VL, WE—S. London (change in existing course—eff. summer 15)

149. Community Development Perspectives on Environmental Justice (4)
Lecture/discussion—4 hours; extensive writing or discussion; project; term paper. Prerequisite: science research methods course. Environmental justice social movements; inequitable distribution of pollution on low-income communities of color; histories, policies, and innovations associated environmental justice movements in the United States and around the world. Offered in alternate years. GE credit: Social, Div, Wrt | DD, OL, SS, VL, WE—S. London (change in existing course—eff. summer 15)

162. People, Work and Technology (4)
Lecture—4 hours. Prerequisite: upper division standing and completion of eight units of coursework in Anthropology, Anthropology, or Community and Regional Development. Restricted to upper division standing. Analysis of the relationships between work, technology, and human experience. Theories of the causes and consequences of labor process change; impacts of race/ethnicity, class, gender, and citizenship status on work; responses of workers, communi- ties, and policy-makers to workplace changes.—F. (F.) Wisser (change in existing course—eff. summer 15)

172. Social Inequality: Issues and Innovations (4)
Lecture/discussion—4 hours; extensive writing; term paper; project. Prerequisite: upper division standing and completion of eight units of course work in Anthropology, Anthropology, or Community and Regional Development. Focus on the dimensions, causes, and means of alleviating social inequality in the U.S. Examination and analysis of major theories and forms [social, race/ethnicity, gender, and citizenship status] of inequality. Policy-based and grassroots approaches to change.—S. (S.) Visser (change in existing course—eff. summer 15)

194HA. Special Study for Honors Students (4)
Independent study—3 hours; seminar—1 hour; project; term paper. Prerequisite: completion of at least four upper division courses; agreement of a faculty member to serve as thesis adviser; consent of instructor. Community and Regional Development Honors is a program of direct reading, research and writing culminating in the preparation of a Senior Honors Thesis under the direction of a faculty adviser. (Deferred grading only, pending completion of sequence.)—F. (F.) Wirt Hirtz (change in existing course—eff. spring 15)

194HB. Special Study for Honors Students (4)
Independent study—3 hours; seminar—1 hour; project; term paper. Prerequisite: completion of at least four upper division courses; agreement of a faculty member to serve as thesis adviser; consent of instructor. Community and Regional Development Honors is a program of direct reading, research and writing culminating in the preparation of a Senior Honors Thesis under the direction of a faculty adviser. (Deferred grading only, pending completion of sequence.)—F. (F.) Wirt Hirtz (change in existing course—eff. summer 15)
Comparative Literature

New and changed courses in Comparative Literature (COM)

Lower Division

1. Major Books of Western Culture: The Ancient World (4)
   Lecture/discussion—4 hours. Prerequisite: completion of Entry Level Writing Requirement. Introduction to the major works of ancient Western civilization, including those of Greece and Rome, with readings from Homer, Plato, Aristotle, and critical analysis of the ways that ancient forms of writing and culture can help us understand the modern world.
   GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

2. Major Books of Western Culture: From the Middle Ages to the Enlightenment (4)
   Lecture/discussion—4 hours. Prerequisite: completion of Entry Level Writing Requirement. Introduction to the major works of the Middle Ages and the Renaissance, with readings from European and non-European authors, focusing on the ways that these works can help us understand the modern world.
   GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

3. Major Books of Western Culture: The Modern Crisis (4)
   Lecture/discussion—4 hours. Prerequisite: completion of Entry Level Writing Requirement. Introduction to the major works of the modern world, with readings from the 19th and 20th centuries, focusing on the ways that these works can help us understand the modern world.
   GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

4. Major Books of the Contemporary World (4)
   Lecture/discussion—4 hours. Prerequisite: completion of Entry Level Writing Requirement. Introduction to the major works of the contemporary world, with readings from the 21st century, focusing on the ways that these works can help us understand the modern world.
   GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

5. Fairy Tales, Fables, and Parables (4)
   Lecture—3 hours; discussion—1 hour. An introduction to fairy tales, fables, and parables as recurrent forms in literature, with readings from diverse authors such as Shakespeare, P'u Song-Ling, Kafka, Kawabata, Foster, and Morrison. GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

6. Myths and Legends (4)
   Lecture—3 hours; discussion—1 hour. An introduction to myths and legends as recurrent forms in literature, with readings from diverse authors such as Homer, Virgil, Augustine, the Bible, and the Quran. GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

7. Literature of Fantasy and the Supernatural (4)
   Lecture—3 hours; discussion—1 hour. An introduction to the literature of fantasy and the supernatural, with readings from diverse authors such as Tolkien, Lovecraft, and Poe. GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

New Courses

8. Utopias and their Transformations (4)
   Lecture/discussion—3 hours; term paper. Prerequisite: satisfaction of the Subject A Requirement. A consideration of the ways that utopian ideas have been used to imagine the future, with readings from diverse authors such as More, Utopia; Orwell, Nineteen Eighty-Four; and Huxley, Brave New World. GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

9. The Short Story and Novella (4)
   Lecture/discussion—3 hours; term paper. An introduction to the short story and novella, with readings from diverse authors such as Chekhov, Kafka, and Hemingway. GE credit: ArtHum, Div | AH, WC, WE.
   (change in existing course—eff. summer 15)

10A. Master Authors in World Literature (4)
    Gilgamesh, Ramayana, Beowulf, Nirbelungenlied (4)
    Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors, with readings in English translation. Content alternates among the following segments: Gilgamesh, Ramayana, Beowulf, Nirbelungenlied. May be repeated for credit in different subject area. (P/NP grading only)
    (change in existing course—eff. summer 15)

10B. Master Authors in World Literature (4)
    Metamorphoses, Decameron, Arabian Nights, Canterbury Tales (2)
    Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors, with readings in English translation. Content alternates among the following segments: Metamorphoses, Decameron, Arabian Nights, Canterbury Tales. (P/NP grading only)
    (change in existing course—eff. summer 15)

10C. Master Authors in World Literature (4)
    Chanson de Roland, El Cid, Igor’s Campaign, Morte d’Arthur (2)
    Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors, with readings in English translation. Content alternates among the following segments: Chanson de Roland, El Cid, Igor’s Campaign, Morte d’Arthur. May be repeated for credit in different subject area. (P/NP grading only)
    (change in existing course—eff. summer 15)

10D. Master Authors in World Literature (4)
    Sakuntala, Tristan and Isolde, Aucassin and Nicolette, Gawain and the Green Knight (2)
    Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors, with readings in English translation. Content alternates among the following segments: Sakuntala, Tristan and Isolde, Aucassin and Nicolette, Gawain and the Green Knight. May be repeated for credit in different subject area. (P/NP grading only)
    (change in existing course—eff. summer 15)

10E. Master Authors in World Literature (4)
    Swift, Rabelais, La Celestina, Simplicissimus (2)
    Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors, with readings in English translation. Content alternates among the following segments: Swift, Rabelais, La Celestina, Simplicissimus. May be repeated for credit in different subject area. (P/NP grading only)
    (change in existing course—eff. summer 15)

Pre-Fall 2011 General Education (GE): ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Dominic Diversity; Wrt=Writing Experience
Fall 2011 and on Revised General Education (GE): ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences
Quarter Offered: F=Fall; W=Winter; S=Spring; J=Summer; 2015-2016 offering in parentheses

Graduate

241. The Economics of Community Development (4)
   Seminar—4 hours. Prerequisite: graduate standing. Economic theories and methods of planning for communities. Human resources, community services and infrastructure, industrialization and technological change, and regional growth. The community’s role in the greater economy. (Same course as Geography 241.) Offered irregularly. —Kenney
   (change in existing course—eff. summer 15)

242. Community Development Organizations (4)
   Seminar—4 hours. Prerequisite: course 240. Class size limited to 15 students. Theory and praxis of organizations with social change agendas at the community level. Emphasis on non-profit organizations and philanthropic foundations. —S. (S) Hirtz
   (change in existing course—eff. fall 14)

242S. Community Development
   Seminar—4 hours. Prerequisite: course 240. Class size limited to 10 students. Theory and praxis of organizations with social change agendas at the community level. Emphasis on local governance, nonprofit organizations and philanthropic foundations at an international level. Limited enrollment. —Su. (Su.) Hirtz
   (change in existing course—eff. fall 14)

247. Transformation of Work (4)
   Lecture/discussion—4 hours. Prerequisite: graduate standing in history or social science degree program or consent of instructor. Exploration of the ways that the experience, organization, and systems of work are being reconfigured in the late twentieth century. The impacts of economic restructuring on local communities and workers. —F. (F) Visser
   (change in existing course—eff. summer 15)

248B. Social Policy, Welfare Theories and Communities II (4)
   Fieldwork—10 hours; lecture—5 hours; workshop—5 hours. Prerequisite: course 248A. Class size limited to 10 students. Theory and praxis of organizations with social change agendas at the community level. Emphasis on local governance, nonprofit organizations and philanthropic foundations at an international level. Limited enrollment. —S. (S.) Hirtz
   (change in existing course—eff. fall 14)

249. Media Innovation and Community Development (4)
   Seminar—4 hours. Restricted to graduate students. Role of media innovation in communities and social change. Studies historical, practical and theoretical issues involving media in community organizing, social justice movements, democracy initiatives, and economic justice. —S. (S.) Hirtz
   (change in existing course—eff. fall 14)

293. Community Development Graduate Practicum (1)
   Lecture/discussion—1 hour. Prerequisite: enrollment in Community Development graduate program. Restricted to first year Community Development graduate students only. Introduction to graduate training in Community Development. Seminar designed to introduce students entering graduate work in the Community Development Graduate Program to its ongoing activities. (S/U grading only)—F. (F) Gahl
   (change in existing course—eff. fall 14)
10L. Master Authors in World Literature; Unamuno, Svevo, Conrad, Gide, Kafka, Faulkner (2)
Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors; readings in English translation. Content alternates among the following segments: Unamuno, Svevo, Conrad, Gide, Kafka, Faulkner. May be repeated for credit in different subject area. (P/NP grading only.)

[change in existing course—eff. summer 15]

10M. Master Authors in World Literature; Rilke/Yeats, Joyce/Woolf, Mann/Celine, Bulgakov/Tanzaki, O’Neill/Brecht, Lorca/Pirandello (2)
Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors; readings in English translation. Content alternates among the following segments: Rilke, Yeats, Joyce, Woolf, Mann, Celine, Bulgakov, Tanzaki, O’Neill, Brecht, Lorca, Pirandello. May be repeated for credit in different subject area. (P/NP grading only.)

[change in existing course—eff. summer 15]

10N. Master Authors in World Literature; Camus/Sartre, Garcia Márquez/Grass, Borges/Sarratze, Below/Nabokov, Beckett/Pinter, Genet/Dürrenmatt (2)
Lecture/discussion—1 hour. Limited enrollment. Designed primarily to acquaint the non-literature major with a cross-section of writings by the world’s most important authors; readings in English translation. Content alternates among the following segments: Camus, Sartre, Garcia Márquez, Grass, Borges, Sarratze, Below, Nabokov, Beckett, Pinter, Genet, Dürrenmatt. May be repeated for credit in different subject area. (P/NP grading only.)

[change in existing course—eff. summer 15]

12. Introduction to Women Writers (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of subject A requirement. Survey of fiction, drama, and poetry by women writers from all continents. Concerned with women as they appear in light of their varied social and cultural traditions. Literary analysis of voice, imagery, narrative strategies and diction. GE credit: ArtHum, Div, Writ | AH, WC, WE—Lokie.

[change in existing course—eff. summer 15]

13. Dramatic Literature (3)
Lecture—3 hours. Prerequisite: completion of Subject A requirement or the equivalent. Introduction, through careful reading of selected plays, to some of the major forms of Western drama, from the earliest tragedies of ancient Greece to the contemporary American theater. GE credit: ArtHum, Div, Writ | AH, WC, WE.

[change in existing course—eff. summer 15]

14. Introduction to Poetry (3)
Lecture/discussion—3 hours. Prerequisite: completion of Subject A requirement. Comparative study of poetry in a variety of lyric and other poetic forms from different historical periods and different linguistic, national, and cultural traditions. GE credit: ArtHum, Writ | AH, WC, WE.

[change in existing course—eff. summer 15]

20. Humans and the Natural World (4)
Lecture/discussion—3 hours; term paper. Changing relationship between humans and the natural environment in ancient and modern authors as Virgil, Li Po, Basho, Darwin, and Thoreau. GE credit: ArtHum, Writ | AH, WC, WE.

[change in existing course—eff. summer 15]

24. Animals in Literature (4)
Lecture—3 hours; term paper or discussion. Prerequisite: course completion of Entry Level Writing Requirement. Study of literary texts from various periods and cultures whose theme is the representation of animals. GE credit: ArtHum | AH, WC, WE.—Schieds (change in existing course—eff. summer 15)

25. Ethnic Minority Writers in World Literature (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: ELWR (Entry Level Writing Requirement). Consideration of a broad range of writers who speak from an ethnic perspective different from the nominally or politically dominant culture of their respective countries and who explore the challenges faced by characters significantly affected by their ethnic minority status. GE credit: ArtHum, Div, Writ | AH, WC, WE.

[change in existing course—eff. summer 15]

53A. Literature of East Asia (4)
Lecture—3 hours; term paper. Introduction to representative masterpieces of East Asia with readings from such works as The Story of the Stone, The Peach Blossom Fan, Tang and Sung poetry, classical Japanese poetry, drama, and travel diaries, and The Tale of Genji. GE credit: ArtHum, Div, Writ | AH, OL, WC, WE.—Schildgen

[change in existing course—eff. summer 15]

53B. Literature of South Asia (4)
Lecture—3 hours; term paper. Introduction to representative masterpieces of South Asia with readings from such works as the Mahabharata and Ramayana, The Cloud Messenger, Shakuntala, The Little Clay Cart, and the stories and poems of both ancient and modern India and Southeast Asia. GE credit: ArtHum, Div, Writ | AH, OL, WC, WE.—Sharet

[change in existing course—eff. summer 15]

91Y. Directed Group Study (1-5)
Restricted to lower division students. (P/NP grading only.)

[change in existing course—eff. summer 15]

99. Special Study for Undergraduates (1-5)
(P/NP grading only)

[change in existing course—eff. summer 15]

Upper Division

100. World Cinema (4)
Lecture/discussion—3 hours; film viewing—3 hours. Prerequisite: upper-division standing, or consent of instructor. A comparative, cross-cultural study of a topic, theme, or movement in world cinema beyond the boundary of a single national tradition. Topics may include “postsocialist cinemas in East Europe and Asia,” “cinema and globalization,” and “popular Asian cinemas.” May be repeated three times for credit when topic differs. GE credit: ArtHum, Div, Writ | AH, VL, WC, WE.—Wu

[change in existing course—eff. summer 15]
1.10. Hong Kong Cinema (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. A literary introduction to the cul-
ture, performance, and visual art. Emphasis on the
time period, with attention to the "gro-
tesque" in selected texts from the Renaissance to the
20th century, with attention to the "grotesque" as a
means of social, cultural, and political commentary, as
well as of aesthetic innovation. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.2. Critical Reading and Analysis (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Study of representa-
tions of the representation of the city in major trans-
literated literary texts from a variety of literary traditions
and periods. Emphasis on the diversity of urban
experience in literature. Topics include public and
private space, memory, and gender. GE credit: ArtHum, Div, Wrt | AH, WC, WE—Radwan, Shar-
et (change in existing course—eff. summer 15)

1.3. Mechanical Analysis of Renaissance (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Lecture—3 hours; term paper. Study of the
origins, development and implications of the literature of detection in a com-
parative context. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.4. Mystical Literatures of South Asia and
the Middle East (4)
Lecture/discussion—3 hours; term paper. Exploration of the
comparative mystical literatures of major relig-
ious traditions with special attention to those produced
in South Asia and the Middle East, although includ-
ing other traditions. GE credit: ArtHum, Div, Wrt | AH, WC, WE—Venkatesan
(change in existing course—eff. summer 15)

1.5. Colonial and Postcolonial Experience
in Literature (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Literary introduction to the cul-
tural issues of colonialism and postcolonialism through reading discursive writing on nar-
atives which articulate diverse points of view. GE credit: ArtHum, Div, Wrt | AH, WC, WE—Larsen
(change in existing course—eff. summer 15)

1.6. Literature of the Americas (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Study of the various sty-
listic, historical, social, and cultural factors that con-
tribute to a hemispheric vision of American literature, encompassing works by Canadian, United States,
Caribbean, Brazilian, and Spanish-American writ-
ers. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.7. War and Peace in Literature (4)
Lecture/discussion—3 hours; term paper. Study of the origins, litera-
tary and social background, and major works of women who represent a particular theme, period, or
gender. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.8. The Detective Story as Literature (4)
Lecture—3 hours; term paper. Major texts from Arab-
ian, Persian, Ottoman Turkish and Urdu literature with attention to his-
torical and cross-cultural context. Includes epic, romance, various genres of lyric
poetry, fairy tales, historical and religious stories, mystical and philosophical narratives, and essays.
GE credit: ArtHum, Div, Wrt | AH, OL, WC, WE—Sharlet
(change in existing course—eff. summer 15)

1.9. The Ramayana (4)
Lecture—3 hours; term paper. Exploration of the
Indian epic, Ramayana, through the lens of litera-
ture, performance, and visual art. Emphasis on the
intersections of literary, visual and performance dimen-
sions. Topics include Ramayanas in Southeast Asia, and in various South Asian diaspora communities.
(Change course as Religious Studies 158) GE credit: ArtHum, Div, Wrt | AH, WC, WE—Venkatesan
(change in existing course—eff. summer 15)

1.10. Hong Kong Cinema (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Study of representa-
tions of the representation of the city in major trans-
literated literary texts in Southeast Asia, colonial, post-
colonial, and contemporary South Asian literatures.
GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE—Lu
(change in existing course—eff. summer 15)

1.11. Writing Nature: 1750 to the Present
Lecture/discussion—3 hours; term paper. An explo-
ration of women’s differing views of self and society
as revealed in major works by female authors of var-
ious times and cultures. Readings, principally of fic-
tion, will include such writers as Lady Murasaki, Mme de Lafayette, and Charlotte Bronte. GE credit: ArtHum, Div, Wrt | AH, WC, WE—Lokke, Schie-
vari (change in existing course—eff. summer 15)

1.12. Myth in Literature (4)
Lecture—3 hours; term paper. Prerequire: course 6
recommended. Comparative study of different ver-
sions of one or more central myths, with attention to
their cultural settings, artistic and literary forms of
presentation, as well as to their psychological
dimensions. GE credit: ArtHum, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.13. Modern Jewish Writers (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of the Subject A requirement and
one lower division literature course. Problems of the
modern Jewish experience from the perspective of
the writer's construction of the self in relation to the
future and to the non-Jew. Draws upon Russian, Ger-
man, Yiddish, and American traditions. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

1.14. Literature of the Americas (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: completion of Subject A requirement and at
least one course in literature. Study of the various sty-
listic, historical, social, and cultural factors that con-
tribute to a hemispheric vision of American literature, encompassing works by Canadian, United States,
Caribbean, Brazilian, and Spanish-American writ-
ers. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

2.0. Literature of the Americas (4)
Lecture/discussion—6 hours; term paper; field-
work—6 hours. Prerequire: completion of Entry
Level Writing Requirement and at least one course in
literature, or consent of instructor. Various stylistic,
historical, social, and cultural factors that contribute
to a hemispheric vision of American literature, encompassing works by Canadian, United States,
Caribbean, Brazilian, and Spanish-American writ-
ers. Course taught abroad. May be repeated one
time for credit. GE credit: ArtHum, Div, Wrt | AH,
VL, WC, WE—Larsen (change in existing course—eff. summer 15)

2.1. The Forms of Asian Literature (4)
Lecture/discussion—3 hours; term paper. Prerequire-
cite: upper division standing. Introduction to distinct-
ive Asian literary forms, such as haiku, noh, the
Chinese novel and tale, through reading of major
works. Comparison with Western genres and study
of native and Western critical traditions. GE credit: ArtHum, Div, Wrt | AH, WC, WE
(change in existing course—eff. summer 15)

2.2. African Literature (4)
Lecture—3 hours; term paper. Prerequire: comple-
tion of Entry Level Writing Requirement (ELWR).
Colonial and post-colonial sub-Saharan African liter-
ature and the African oral traditions from which it emerged. Genres and themes of African literature
from the nineteenth century to the present. GE credit: ArtHum | AH, OL, WC, WE—Adejumobi
(change in existing course—eff. summer 15)

2.3. Classical Literatures of the Islamic
World 600-1900 (4)
Lecture—3 hours; term paper. Major texts from Arab-
ian, Persian, Ottoman Turkish and Urdu literature with attention to his-
torical and cross-cultural context. Includes epic, romance, various genres of lyric
poetry, fairy tales, historical and religious stories, mystical and philosophical narratives, and essays.
GE credit: ArtHum, Div, Wrt | AH, OL, WC, WE—Sharlet
(change in existing course—eff. summer 15)

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; ScEnG—Science and Engineering; SacSoi—Social Sciences; DivD—Domestic Diversity; Wrt—Writing Experience
Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SS—Social Sciences; AGCH—American Cultures; DD—Domestic Diversity; OL—Oral Skills; OL Quartzitative; SL—Scientific; VL—Visual; WC—World Cultures; WRT—Writing Experience
Quarter Offered: F—Fall, W—Winter, S—Spring, S—Summer; 2013-2016 offering in parentheses
ancient to modern works, such as Lytsriatta, Emma, Hedda Gabler, The Makoko Sisters, and Top Girls. GE credit: ArtHum, Div, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

160A. The Modern Novel (4)
Lecture/discussion—3 hours; term paper. The changing image of man and his world as seen in novels by such writers as Joyce, Proust, and Mann. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

160B. The Modern Drama (4)
Lecture/discussion—3 hours; term paper. Readings in major plays by Ibsen, Strindberg, Chekhov, Pirandello and Brecht. GE credit: ArtHum, Wrt | AH, WC, WE. — Finney (change in existing course—eff. summer 15)

161A. Tragedy (4)
Lecture/discussion—3 hours; term paper. Persistent and changing aspects of the tragic vision in literature from ancient times to the present. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

161B. Comedy (4)
Lecture/discussion—3 hours; term paper. Comic attitudes toward life in literary works of different ages. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

162. Writing Love and War in South Asia (4)
Lecture—3 hours; term paper. Comparative study of the themes and motifs of love and war in the literature of South Asia. Includes a discussion of Sanskrit epics, classical erotic court poetry, medieval heroic poetry, mystical compositions and colonial and post-colonial fiction. GE credit: ArtHum | AH, WC, OL, WE — Venkatesan (change in existing course—eff. summer 15)

163. Biography and Autobiography (4)
Lecture/discussion—3 hours; term paper. Portrayals of a human life in biographies and/or autobiographies of different countries and ages. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

164A. The European Middle Ages (4)
Lecture/discussion—3 hours; term paper. Prerequisites: Subject A. Medieval literary genres as a foundation for modern literary forms. Topics and themes as love, God, vision, nature, history and politics, and sign theory. GE credit: ArtHum, Wrt | AH, WC, WE. — Schlegldsen (change in existing course—eff. summer 15)

164B. The Renaissance (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Subject A. Literature, new science, gender, politics, and exploration in European Renaissance. Readings in Petrarch, Machiavelli, Montaigne, Tasso, Ariosto, Stampa, Shakespeare, labe and Apbrah Behn. GE credit: ArtHum, Wrt | AH, WC, WE. — Schiesaria (change in existing course—eff. summer 15)

164C. Baroque and Neoclassicism (4)
Lecture/discussion—3 hours; term paper. Readings in major authors such as Calderón, Conérille, Past- cal, Racine, Milton, and Grimmelnhausen, with consideration of the tension between the expansive energies of the “baroque” and the restraints of dogma and reason. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

164D. The Enlightenment (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Subject A. Enlightenment writers such as Swift, Vollaire, Sterne, Rousseau, Wollstoncote, and Kant. Emphasis on the revolutionary impact of eighteenth-century philosophical ideas and literary forms on modern political, social, and aesthetic culture. GE credit: ArtHum, Wrt | AH, WC, WE. —Uhlig (change in existing course—eff. summer 15)

165. Caribbean Literatures (4)
Lecture/discussion—4 hours. Prerequisite: upper division standing in the student’s discipline of origin. Comparative approach to the multi-lingual, mult-cultural literatures of the Caribbean. Works from English, French, and Spanish speaking regions with special attention to problems of identity, diaspora and resistance, class, gender, race. Not open for credit to students who have completed course 165S. GE credit: ArtHum, Div, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

165S. Caribbean Literatures (4)
Lecture/discussion—4 hours. Prerequisite: upper division standing. Comparative approach to the multi-lingual, mult-cultural literatures of the Caribbean. Works from English, French, and Spanish speaking regions with special attention to problems of identity, diaspora and resistance, class, gender, race. Taught at the University of Havana, Cuba. Not open for credit to students who have completed course 165S. GE credit: ArtHum, Div, Wrt | AH, WC, WE. —Sharlet (change in existing course—eff. summer 15)

166. Literatures of the Modern Middle East (4)
Lecture/discussion—3 hours; term paper. Major translated works in modern Middle Eastern and North African Literature, including Arabic, Hebrew, Persian, and Turkish. Social and historical formation, with topics such as conflict and coexistence, journeys, and displacement and family. GE credit: ArtHum, Wrt | AH, WC, WE. —Sharlet (change in existing course—eff. summer 15)

166A. The Epic (4)
Lecture/discussion—3 hours; term paper. Study of various forms of epic poetry in both the oral and literary traditions. May be repeated for credit in different subject areas. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

166B. The Novel (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Subject A. The novel as a global genre: picturesque, epistolary, Bildungsroman, historical novel, contemporary forms. May be repeated one time for credit. GE credit: ArtHum, Wrt | AH, WC, WE. —Lokke (change in existing course—eff. summer 15)

167. Comparative Study of Major Authors (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Pivotal works of artists in the Western mainstream, such as Dante, Shake- speare, Cervantes, Goethe, Tolstoi, Proust, and Joyce. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

168A. Romanticism (4)
Discussion—3 hours; term paper. Prerequisite: any introductory course in literature. Introduction to the Romantic movement with emphasis upon Romantic concepts of the self, irony, love, the imagination and artistic creativity, and the relationship of the individual to nature and society. GE credit: ArtHum, Wrt | AH, WC, WE. — Lokie (change in existing course—eff. summer 15)

168B. Realism and Naturalism (4)
Discussion—3 hours; term paper. Prerequisite: consent of instructor. Novels and plays by Dickens, Zola, Flaubert, Dster, Ibsen, and Strindberg investigate marriage and adultery, the city and its perils, the hardships of industrialization, the war between the sexes, the New Woman, and other 19th-century themes. Offered in alternate years. GE credit: ArtHum, Wrt | AH, WC, WE. — Finney (change in existing course—eff. summer 15)

169. The Avant-Garde (4)
Lecture/discussion—3 hours; term paper. Studies in movements such as surrealism, expressionism and the absurd. GE credit: ArtHum, Wrt | AH, WE. (change in existing course—eff. summer 15)

170. The Contemporary Novel (4)
Lecture—3 hours; term paper. Study of important novels from different parts of the world, including Asia, Africa, Latin America, Europe, and the United States, in the period from the Second World War to the present. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

172. A Story for a Life: The Arabic Nights (4)
Lecture/discussion—3 hours; term paper. In-depth exploration of The Arabic Nights, the best-known work of pre-modern Arabic literature and a major work of world literature. Analysis of the work in its historical context and in comparison to other frame tales in world literature. (Same course as Arabic 140 and Middle East/South Asia Studies 121C.) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WC, WE. —Radwan, Sharlet (new course—eff. winter 16)

175. Shahnameh: The Persian Book of Kings (4)
Lecture/discussion—3 hours; term paper. In-depth analysis of the Persian Book of Kings (Shahnameh) by Abu al-Qasim Ferdowski [c. 1020 CE] in its historical context with a comparative perspective on the role of this work in Persian and world literature. (Same course as Middle East/South Asian Studies 121A.) GE credit: ArtHum, Div, Wrt | AH, WC, WE — Aanooshahr, Sharlet (change in existing course—eff. summer 15)

180. Selected Topics in Comparative Literature (4)
Lecture/discussion—3 hours; term paper. Prerequisite: completion of Subject A requirement and at least one course in literature. Study of a selected topic or topics appropriate to student and faculty interests and areas of specialization of the instructor. May be repeated one time for credit when topic differs. GE credit: ArtHum, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

180S. Selected Topics in Comparative Literature (Taught Abroad) (4)
Lecture/discussion—6 hours; extensive writing, fieldwork—6 hours. Prerequisite: Subject A; at least one course in literature, or consent of instructor. Study of selected topics appropriate to student and faculty interests and areas of specialization of the instructor. May be repeated one time for credit when topic differs. Offered irregularly. GE credit: ArtHum, Wrt | AH, WC, WE. — Su. (change in existing course—eff. summer 15)

192. Internship in Comparative Literature (1-12)
Internship—1-12 hours. Prerequisite: completion of 8 units, consent of instructor. Restricted to Comparative Literature majors. Internships in fields where students can practice their skills. May be repeated up to 12 units for credit. (P/NF grading only.) (change in existing course—eff. summer 15)

194H. Special Study for Honors Students (1-5)
Independent study—1-5 hours. Prerequisite: open only to majors of senior standing who qualify for honors program. Guided research, under the direction of a faculty member approved by the Program.
Director, leading to a senior honors thesis on a comparative topic. May be repeated for credit. [P/NP grading only] GE credit: AH, WE.

195. Seminar in Comparative Literature (4) Seminar—3 hours, term paper. Prerequisite: senior standing as a Comparative Literature major or minor or consent of instructor. Open only to Comparative Literature majors or minors in or consent of instructor. Advanced study of selected topics and texts in Comparative Literature, with explicit emphasis on the theoretical and interpretative approaches that define Comparative Literature as a discipline and distinguish it from other literary disciplines. Required for the major. GE credit: ArtHum | AH, WE.

197T. Tutoring in Comparative Literature (1-5) Discussion—2-4 hours. Prerequisite: upper division standing with declared major in Comparative Literature. Tutoring in undergraduate courses including leadership in small voluntary discussion groups affiliated with current courses offered by Comparative Literature. May be repeated for credit for a total of 6 units. [P/NP grading only]

198. Directed Group Study for Advanced Undergraduates (1-5) [P/NP grading only] (change in existing course—eff. summer 15) 200C. History of Critical Theory (4) Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of major theoretical developments in the understanding of poetic discourse. Offered irregularly.—Schievare (cancel course—eff. fall 15) (change in existing course—eff. summer 15)

199. Special Study for Advanced Undergraduates (1-5) [P/NP grading only]

200. Literary Genres (4) Discussion—3 hours; term paper. Prerequisite: graduate standing in Comparative Literature, English, or a foreign-language literature, or consent of instructor. Comparative, interpretive study of the treatment of specific topics and themes in literary works from various periods, societies, and cultures, in light of these works’ historical and sociocultural contexts. May be repeated for credit when topic differs.

199T. Tutoring in Comparative Literature (1-5) Discussion—2-4 hours. Prerequisite: upper division standing with declared major in Comparative Literature. Tutoring in undergraduate courses including leadership in small voluntary discussion groups affiliated with current courses offered by Comparative Literature. May be repeated for credit for a total of 6 units. [P/NP grading only] (change in existing course—eff. summer 15)


200B. Research in Second Literature (4) Project. Individually guided research in the secondary literature of a faculty member, in a paper. Required of Ph.D. candidates. (change in existing course—eff. summer 15)

200C. Research in Third Literature or Special Topic (4) Conference—1 hour; term paper; independent study—8 hours. Individually guided research, under the supervision of a faculty member, in the third literature of concentration or on a special topic culminating in a paper. Required of Ph.D. candidates. (change in existing course—eff. winter 16)

2050. Comparative Psychology (4) (cancel course—eff. fall 15) 392. Teaching Internship in Comparative Literature (2) Discussion—2 hours. Restricted to graduate students. Regular consultations between the student instructor teaching Comparative Literature courses and a supervisor. Specifically designed for first-time TAs in COM 5, 6, 7, and 10. Instruction in the teaching of writing in a literature course, grading of papers, leading discussions. [S/U grading only]—F, W, S. (F, W, S.) (change in existing course—eff. winter 16)


207. Tutoring in Comparative Literature (1-5) Discussion—2-4 hours. Prerequisite: upper division standing with declared major in Comparative Literature. Tutoring in undergraduate courses including leadership in small voluntary discussion groups affiliated with current courses offered by Comparative Literature. May be repeated for credit for a total of 6 units. [P/NP grading only] (change in existing course—eff. summer 15)

214. Approaches to Lyric Poetry (4) Seminar—3 hours, term paper. Prerequisite: graduate standing or consent of instructor. Analysis and interpretation of poetic texts in different historical periods and national literatures, with consideration of major theoretical developments in the understanding of poetic discourse. Offered irregularly.—Schievare (change in existing course—eff. summer 15)

215. Forms of the Spiritual Quest (4) Seminar—3 hours, term paper. Prerequisite: graduate standing or consent of instructor; knowledge of at least one foreign language. An exploration, culminating in a research paper, of changing forms of the quest for transcendence in different cultures, mainly in major works of Western literature, but also in other traditions and from the perspectives of other disciplines. Offered irregularly.

220. Literary Genres (4) Discussion—3 hours; term paper. Prerequisite: graduate standing in Comparative Literature, English, or a foreign-language literature, or consent of instructor. Comparative literature of major works in a particular genre from various linguistic, national, and cultural traditions, with particular attention to histori-
202. Visual Culture (4) Lecture/discussion—4 hours. Restricted to Graduate student standing. Analysis of image production in the contemporary world (photography, film, television, advertising, etc.) and their effects on individual subjectivities and collective social identities. Offered irregularly. —W. (W) (change in existing course—eff. spring 16)

298. Directed Group Study (1-5) Prerequisite: consent of instructor. Restricted to Graduate student standing. —F, W, S. (F, W, S.) (change in existing course—eff. spring 16)

299. Individual Study (1-12) Prerequisite: graduate student standing. (S/U grading only)—F, W, S. (F, W, S.) (change in existing course—eff. spring 16)

Cultural Studies

New and changed courses in Cultural Studies (CST) Graduate

270A. Individually Guided Research in Cultural Studies (4) Discussion—1 hour; independent study—2 hours; extensive writing. Prerequisite: course 200C, 250, consent of instructor. Individually guided research, under the supervision of a faculty member, on a Cultural Studies topic related to the student’s proposed dissertation project to produce a dissertation prospectus. —F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

270B. Individually Guided Research in Cultural Studies (4) Discussion—1 hour; independent study—2 hours; extensive writing. Prerequisite: course 200C, 250, consent of instructor. Individually guided research, under the supervision of a faculty member, on a Cultural Studies topic related to the student’s proposed dissertation project to produce a dissertation prospectus. —F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

270C. Individually Guided Research in Cultural Studies (4) Discussion—1 hour; independent study—2 hours; extensive writing. Prerequisite: course 200C, 250, consent of instructor. Individually guided research, under the supervision of a faculty member, on a Cultural Studies topic related to the student’s proposed dissertation project to produce a dissertation prospectus. —F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Davis Honors Challenge

New and changed courses in Davis Honors Challenge (HNR) Upper Division

194. Honors Seminar (3) Seminar—3 hours. Prerequisite: consent of instructor. Open only to students in the Davis Honors Challenge. Team-based work on actual problems drawn from the public or private sector. Focus on critical thinking and analytical interpretation, oral and written communication skills, and development of practical solutions to real-world problems. GE credit. Wrt.—W. S. (W, W) (change in existing course—eff. winter 15)

Design

New and changed courses in Design (DES) Upper Division

127A. Sustainable Design (4) Lecture/discussion—4 hours. Prerequisite: course 1. Priority to Design majors. Principles, practice, and materials of contemporary sustainable design in the context of environmental crisis. History of sustainable design in relation to the fields of textiles, visual communication, interior architecture, exhibition design and lighting. GE credit: ArtHum | AH, VL.—F, f. (F) Savageau (change in existing course—eff. winter 15)

144. History of Interior Architecture (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 1. Pass One priority to Design majors. Theoretical survey of interiors and furniture history in relation to dwelling patterns. Focus on dwellings in their cultural settings and development of modern interior design theories. Interiors considered in relation to buildings' exteriors, sites, and uses. Offered in alternate years: GE credit. ArtHum | AH, WE.—Houselfield (change in existing course—eff. winter 15)

157. Interactive Media II (4) Studio—4 hours; lecture/discussion—2 hours. Prerequisite: course 1, 14, 15, 16, 37, 117; course 115 recommended or consent of instructor. Priority to Design majors. Technical and conceptual aspects of creating interactive applications, such as CSS for type and position and interactivity with ActionScript. Attention to conceptual framework, visual design and user interaction design. Research and written pre-production materials required. GE credit: ArtHum | AH, VL.—S. (S) Drew (change in existing course—eff. winter 15)

160. Textile Surface Design: Patterns and Resist (4) Studio—4 hours; lecture/discussion—2 hours. Prerequisite: course 1, 14, 15, or consent of instructor. Priority to Design majors. Use of traditional and contemporary processes to create images and patterns on fabric using a variety of dyes, including direct applications, bound and mechanical resists. Emphasis on individual exploration and interpretation of processes and techniques. May be repeated for credit one time with consent of instructor. GE credit: ArtHum | AH, VL.—S. (S) Avila (change in existing course—eff. spring 16)

161. Textile Surface Design: Screen and Digital Printing (4) Studio—4 hours; lecture/discussion—2 hours. Prerequisite: course 1, 14, 15, 16. Priority to Design majors. Design of textiles and screen printing on fabrics; soft product development; integration of hand-produced and digitally generated imagery on cloth. GE credit: ArtHum | AH, VL.—F. (F) Avila (change in existing course—eff. spring 16)

186. Environmental Graphic Design (4) Studio—4 hours; lecture/discussion—2 hours. Prerequisite: course 1, 14, 15, 16, and 115 or consent of instructor. Priority to Design majors. Design of informational and directional graphics for the built environment. Application and integration of typography, imagery and symbols into the architectural landscape. Development of universal wayfinding and graphic navigational systems to help people find their way. GE credit: ArtHum | AH, VL.—W. (W) McNeil (change in existing course—eff. winter 15)

190. Proseminar (1) Seminar—1 hour. Prerequisite: design major or consent of instructor. Philosophical questions of design explored through discussion and presentation of research results. May be repeated three times for credit when topic differs. [P/NP grading only] (change in existing course—eff. fall 14)

191A. Workshops in Design (4-12) Seminar—1 hour; field trip experience—3 hours per unit (units determined by instructor and student); field trip. Prerequisite: course 14, 15; upper division standing and consent of instructor. Faculty initiated workshops featuring advanced studies and applications of original work in Design: Costume. Letter grading by contract. Field trips included. Credit limited to 12 units in one section or a combination of sections. —F, W, S. (F, W, S.) (change in existing course—eff. fall 15)

191B. Workshops in Design (4-12) Seminar—1 hour; field trip experience—3 hours per unit (units determined by instructor and student); field trip. Prerequisite: course 14, 15; upper division standing and consent of instructor. Faculty initiated workshops featuring advanced studies and applications of original work in Design: Graphics. Letter grading by contract. Field trips included. Credit limited to 12 units in one section or a combination of sections. —F, W, S. (F, W, S.) (change in existing course—eff. fall 15)

191C. Workshops in Design (4-12) Seminar—1 hour; field trip experience—3 hours per unit (units determined by instructor and student); field trip. Prerequisite: course 14, 15; upper division standing and consent of instructor. Faculty initiated workshops featuring advanced studies and applications of original work in Design: Textiles. Letter grading by contract. Field trips included. Credit limited to 12 units in one section or a combination of sections. —F, W, S. (F, W, S.) (change in existing course—eff. fall 15)

191D. Workshops in Design (4-12) Seminar—1 hour; field trip experience—3 hours per unit (units determined by instructor and student); field trip. Prerequisite: course 14, 15; upper division standing and consent of instructor. Faculty initiated workshops featuring advanced studies and applications of original work in Design: Interior. Letter grading by contract. Field trips included. Credit limited to 12 units in one section or a combination of sections. —F, W, S. (F, W, S.) (change in existing course—eff. fall 15)

192. Internship (1-6) Internship—3-18 hours. Prerequisite: completion of 84 units and consent of instructor. Enrollment limited to 3 units per quarter or 6 units per IV session. Supervised internship, off and on campus, in areas of design including environmental, costume, textile, museum, display and interior design. (P/NP grading only) (change in existing course—eff. fall 14)

194HA. Special Study for Honors Students (3) Independent study—9 hours. Prerequisite: qualification for Letters and Science Honors Program; senior standing; approval of Design Honors Program proposal by the Curriculum Committee and major advisor; consent of instructor. Limited enrollment. Preparation and presentation of a culminating project. Supervision of an instructor in one of the creative or scholarly areas of Design. (Deferred grading only, pending completion of sequence.) —W. (W) (change in existing course—eff. fall 14)
Graduate
225. Studio Practice in Design (4)
Studio—3 hours. Prerequisite: course 221. Restricted to graduate standing in Design or consent of instructor. Students work together on a collective project to experience the multiple phases of design through an iterative process. Design projects will be geared towards relevance in contemporary social, cultural and political contexts. May be repeated two times for credit.—W (W).
(change in existing course—eff. fall 14)

299. Individual Focused Study (1-12)
Prerequisite: graduate standing in Design or consent of instructor. Advanced study in studio practice on independent projects with faculty consultation. May be repeated for credit.—F, W, S. (F, W, S.)
(change in existing course—eff. fall 14)

Dramatic Art

New and changed courses in Dramatic Art (DRA)

Lower Division
5. Understanding Performance: Appreciation of Modern Theatre, Dance, Film and Performance Art for the Humanities and Sciences (4)
Lecture/discussion—3 hours; laboratory/discussion—1 hour. Relevance of theatre and performance to modern culture, science and society. Approaches to theatre/dance/media/performance art, integrated into Mondavi Centre for the Arts and Theatre and Dance Department programs. (Same course as Science and Society 41.) GE credit: ArtHum, Div | AH, DD, OL, VL, WC, WE—F, W, S. (F, W, S.)
(change in existing course—eff. winter 15)

10. Introduction to Acting (4)
(change in existing course—eff. spring 15)

408. Intermediate Modern Dance (2)
Laboratory/discussion—4 hours. Prerequisite: course 407A. Open to students who have completed course 14 and 40A, unless with consent of instructor. Modern dance techniques. Basic anatomy, dance terminology and a general overview of modern dance history. May be repeated one time for credit. For Dance majors, further repeat negotiated with faculty adviser in dance. GE credit: ArtHum | AH, VL—F, W, S. Su. (F, W, S.)
(change in existing course—eff. fall 14)

41A. Beginning Jazz Dance (2)
Laboratory/discussion—4 hours. Prerequisite: consent of instructor. Fundamentals of jazz dance, includes warm-ups, dance techniques and combinations. Basic anatomy, dance terminology and general overview of jazz dance history. May be repeated one time for credit with consent of instructor.—W (W).
(change in existing course—eff. spring 16)

92. Internship in Dramatic Art (1-12)
Prerequisite: consent of instructor and department chairperson. Restricted to lower division students with less than 84 units completed. Internship outside the Department of Theatre and Dance enabling students to practice their skills. May be repeated up to 12 units for credit. (F/NP grading only)—F, W, S. Su. (F, W, S. Su.)
(change in existing course—eff. fall 14)

Upper Division
115. Advanced Study of Major Film Makers (4)
Lecture/discussion—3 hours; film viewing—2 hours. Analysis of the contribution of some outstanding film creators. Study of diverse aesthetic theories of the cinema and their application to selected films. May be repeated for credit when different film creator studied, or studied with a different methodological approach. GE credit: VL.
(change in existing course—eff. spring 15)

122C. Advanced Acting: Special Topics in Acting (4)
Lecture/laboratory—6 hours. Prerequisite: course 120A and/or consent of instructor. Restricted to Dramatic Art majors; limited enrollment. Intensive study and practical exploration of a specialized area; for example, World Theatre, Social Theatre, Physical Theatre, Musical Theatre; the Ancient Greeks, etc. May be repeated up to eight units for credit. Offered irregularly. GE credit: AH, OL, VL.
(change in existing course—eff. fall 14)

142. History of Modern Dance (4)
Lecture/discussion—4 hours. Modern Dance tradition, focusing on its theorizations of individual and social identity. Theoretical and choreographic analyses of principle dances in this tradition. Offered in alternate years. GE credit: ArtHum | AH, VL, WE.
(change in existing course—eff. fall 14)

146A. Professional Track Modern Dance I (4)
Lecture/laboratory—6 hours. Prerequisite: consent of instructor. Professionally oriented performance training. Rigorous, consistent training regimen based on traditional modern dance technique. Breath and voice, skeletal and muscular positioning, movement from the spine, contraction technique, movement intention. May be repeated two times for credit. GE credit: VL—Grenke
(change in existing course—eff. spring 16)

146B. Professional Track Modern Dance II (4)
Lecture/laboratory—6 hours. Prerequisite: courses 408 and 146A; consent of instructor. Continuation of course 146A. Body and space relationships in solos, duets and group work; stylistic variations of Graham technique; works of Paul Taylor. May be repeated one time for credit. GE credit: VL—Grenke
(change in existing course—eff. fall 15)

146C. Professional Track Modern Dance III (4)
Lecture/laboratory—6 hours. Prerequisite: courses 408, 146A and 146B; consent of instructor. Continuation of course 146B. Time as a theatrical device, sustaining movement, phrasing, musicality. May be repeated one time for credit. Offered irregularly. GE credit: VL—Grenke
(change in existing course—eff. spring 16)

1595. Contemporary Experimental Performance, Theatre and Drama (4)
Lecture/discussion—4 hours. Evaluation and examination of the “New Theatre” as its experimental and innovative nature since the 1960s. Dance, film, stage, performance art and public acts of a performative nature. May be repeated up to 12 units for credit if instructor differs. Offered irregularly. GE credit: ArtHum | AH, WE—Su.
(change in existing course—eff. winter 15)

160A. Principles of Playwriting (4)
Lecture/discussion—4 hours. Prerequisite: two courses in Dramatic Art or related courses in other departments; course 160A prerequisite for 160B or consent of instructor. Analysis of dramatic structure; preparation of scenarios; the composition of plays. GE credit: WE—W (W).
(change in existing course—eff. summer 15)

160B. Principles of Playwriting (4)
Lecture—4 hours. Prerequisite: two courses in Dramatic Art or related courses in other departments; course 160A or consent of instructor. Analysis of dramatic structure; preparation of scenarios; the composition of plays. GE credit: WE.
(change in existing course—eff. summer 15)

174. Acting for Camera (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Analysis and practice of acting skills required for camera work and digital media. May be repeated eight times for credit when instructor differs. (Same course as Cinema & Technocultural Studies 174.)—S. (S.) Anderson, Drew
(change in existing course—eff. spring 15)

175. Small Scale Film Production (4)
Lecture/laboratory—6 hours. Prerequisite: consent of instructor. Lecture and intensive workshop teaching small-scale film production. Appointments as a(n) director, director of photography, actor, writer, lighting designer, sound designer and other critical positions are used to produce and submit a short film to a film festival. (Same course as Technocultural Studies 175.) May be repeated two times for credit.—S. (S.) Anderson, Drew
(change in existing course—eff. spring 15)

180. Theatre Laboratory (1-5)
Prerequisite: upper division standing and course 25, or consent of instructor. Limited enrollment. Projects in acting, production, scene design, costuming, lighting, directing, and playwriting. Participation in departmental productions may be repeated for credit.—F, W, S. (F, W, S.)
(change in existing course—eff. fall 14)

194HA. Special Study for Honors Students (3)
Independent study—9 hours. Prerequisite: qualification for Letters and Science Honors Program and admission to Dramatic Art Senior Honors Program. Preparation and presentation of a culminating project, under the supervision of an instructor, in one of the creative or scholarly areas of Dramatic Art. (Deferred grading only; pending completion of sequence)—F, W, S. (F, W, S.)
(change in existing course—eff. summer 15)

194HB. Special Study for Honors Students (3)
Independent study—9 hours. Prerequisite: qualification for Letters and Science Honors Program and admission to Dramatic Art Senior Honors Program. Preparation and presentation of a culminating project, under the supervision of an instructor, in one of the creative or scholarly areas of Dramatic Art. (Deferred grading only; pending completion of sequence)—F, W, S. (F, W, S.)
(change in existing course—eff. spring 15)

195. Senior Capstone Experience (2)
Project; lecture/discussion—1 hour. Open to Dramatic Art Majors who have completed 135 or more units. Capstone experience for majors. Examination, reflection and synthesis on development. Discussion of professional development and translatable skills. Individual project and development of portfolio. (F/NP grading only); GE credit: ArtHum | AH, WE—W, S. (W, S.)
(new course—eff. spring 15)
224A. Seminar in Theatrical Design: Ancient Worlds—Early 17th Century (4)
Seminar—2 hours, project—2 hours. Prerequisite: consent of instructor. Group study focusing primarily on one discipline: scenic, costume or lighting design. Periods covered: Greek, Medieval, Renaissance, Shakespearean, Jacobean, early 17th century. Design projects include script analysis, research of period style, fashion, character development, developing design concepts, presentation skills.

224B. Seminar in Theatrical Design: Mid 17th Century to 1900 (4)
Seminar—2 hours, project—2 hours. Prerequisite: consent of instructor. Group study focusing primarily on one discipline: scenic, costume or lighting design. Periods covered: Cavalier, Restoration 18th century opera and ballet, 19th century drama. Design projects include script analysis, research of period style, fashion, character development, developing design concepts, presentation skills.

224C. Seminar in Theatrical Design: the 20th Century (4)
Seminar—2 hours, project—2 hours. Prerequisite: consent of instructor. Group study focusing primarily on one discipline: scenic, costume or lighting design. 20th century genres covered: Realism, Brecht, Musicals, Contemporary Dance, short narrative film. Design projects include script analysis, research of period style, fashion, character development, developing design concepts, presentation skills.

224D. Seminar in Theatrical Design: Contemporary Concepts (4)
Seminar—2 hours, project—2 hours. Prerequisite: consent of instructor. Group study focusing primarily on one discipline: scenic, costume or lighting design. Emphasis on contemporary design concepts for new works and classics: Shakespeare, modern dance, concept plays and musicals. Script and character analysis for design in performance, research, design projects.

224E. Seminar in Theatrical Design: Advanced Concepts (4)
Seminar—2 hours, project—2 hours. Prerequisite: consent of instructor. Group study focusing primarily on one discipline: scenic, costume or lighting design. Emphasis on special issues in contemporary design concepts for new works and classics. Script and character analysis for design in performance, research, design projects.

225. Performance Design Studio: Techniques and Media (2)
Studio—2 hours. Prerequisite: consent of instructor. Exploration and development of techniques and skills in the performance design process. Drafting, model building, drawing, painting and rendering, costume drafting, color theory, lighting techniques, design portfolio preparation and presentation. May be repeated up to five times for credit.

228. Seminar in Directing Theory: Non-Realism (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Modern directing theory as it applies to non-realistic theatre; development of directorial concepts for production of selected non-realistic plays—Greek to the present; emphasis on textual analysis.

250. Modern Theatre (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Modern directing theory as it applies to non-realistic theatre; development of directorial concepts for production of selected non-realistic plays—Greek to the present; emphasis on textual analysis.

251. Scoring and Scripting in Performance (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Process of weaving together various performance elements brought into play by the artists in their respective disciplines. The “script” is the thread from which the artists’ “scores” will layer and transform the “script” into performer for specific time, place, spectators. Offered in alternate years. —W (W)

252. Performance: Concepts of Space, Place, and Time (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Innovative theories of creating performance spaces, establishing a sense of place, and communicating the concept of time explored through collaborative interaction. Research includes traditional principles, site-specific spaces and consideration of various tempi from music and movement. Offered in alternate years. —S (S)

253. Approaches to Collaboration (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Exploration of different approaches to collaboration among artists in different media and their influence on the creative process. —F (F)

254. Performing Identities/Personae (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Historical and contemporary theories of creating stage identities. Discussion and project collaborations based on theories. Questions of identity related to ethnicity, gender or sexual orientation. Offered in alternate years. —S (S)

255. Composition in the Arts (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Examine manner in which specific elements utilized by dancers, directors, choreographers, and designers are combined or related to form a whole in space and time, as well as methods of sequencing used by each discipline to produce artistic products. May be repeated one time for credit. —F (F)

256. Visual Language for Performance (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: graduate standing. Restricted to graduate students. Exploration of different approaches and methods to the visual elements of performance. Focus on design and style for different media and genres, storytelling through visual elements in performance. Offered in alternate years. —Morgan (new course—eff. winter 15)

257. Interdisciplinary Seminar in Theatre, Dance and Performance (1)
Seminar—1.5 hours; project—1.5 hours. Prerequisite: consent of instructor. Restricted to students enrolled in the MFA in Dramatic Art; students taking the PhD in Performance Studies or the DE in Studies in Performance and Practice may apply to enroll. Interdisciplinary seminar for first and second year MFA students in Dramatic Art. Topics range from current practice in dance, theatre, film and performance, to leading edge developments by outstanding practitioners in the field. May be repeated two times for credit. —W (W)

260. Topics in Contemporary Theatre and Performance (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Special topics designed to study in depth aspects of contemporary performance including performance analysis, cultural and historical context, modes of production, theoretical and political entitlements, and issues of spectatorship (e.g., “Brecht and After,” “British Theater,” “Race and Gender in Performance.” May be repeated up to five times for credit. —F, W, S (F, W, S)

396. Teaching Assistant Training Practicum (1-4)
Prerequisite: consent of instructor. May be repeated for credit. (S/U grading only)—F, W, S (F, W, S)

East Asian Studies

New and changed courses in East Asian Studies (EAS)

Upper Division

196A. Honors Seminar (4)
Seminar—2 hours; conference—2 hours. Prerequisite: GPA of 3.500 in the major; senior standing; consent of instructor. A two-quarter research project culminating in an Honors thesis. A grade of B or higher must be earned to qualify the student for honors distinction at graduation. (Deferred grading only, pending completion of sequence.) —F (F)

196B. Honors Seminar (4)
Seminar—2 hours; conference—2 hours. Prerequisite: GPA of 3.500 in the major; senior standing; consent of instructor. A two-quarter research project
culturating in an Honors thesis. A grade of B or higher must be earned to qualify the student for honors distinction at graduation. Deferred grading only, pending completion of sequence.—W. [Q]

(change in existing course—eff. summer 15)

Ecology

New and changed courses in Ecology (ECL)

Graduate

200A. Principles and Applications of Ecology (5)

Lecture—4 hours; discussion—1 hour. Prerequisite: first course in Ecology (e.g., Environmental Science and Policy 100). Statistics 102, Mathematics 16A, 16B, or consent of instructor. Pass 1 open to graduate majors. Provides a broad background in the principles and applications of ecology, and serves as a foundation for advanced ecology courses. Topics include ecophysiology, behavioral ecology, population ecology, genetics and evolution. Emphasis on historical developments, current understanding, and real world applications.—F. [F]

(change in existing course—eff. summer 15)

203. Physiological Ecology (3)

Lecture—3 hours. Prerequisite: Evolution and Ecology 100; Neurobiology, Physiology, and Behavior 110 or Plant Biology 111 or Environmental Studies 129; elementary calculus. A comparative examination of several animal groups addressing fundamental physiological mechanisms that shape the ecology of each animal group. Offered in alternate years.—S.

(change in existing course—eff. summer 15)

204. Population and Community Ecology (4)

Lecture—3 hours; discussion—2 hours. Prerequisite: introductory biology (e.g., Biological Sciences 2B) or the equivalent. Examination of concepts and practices in modern marine biology recommended. Critical review and guide simulation efforts, model parameterization, selected topics in the policy process, applications to the field of environmental policy. Develops critical reading skills, understanding of frameworks of the policy process and political behavior, and an ability to multi-disciplinary approaches. Course will emphasize reading and discussing primary literature. Specific topics will reflect the research interests of UC Davis conservation biology faculty. W. [W]

(change in existing course—eff. fall 15)

211. Advanced Topics in Cultural Ecology (4)

Lecture/discussion—3 hours; term paper. Prerequisite: Environmental Science and Policy 133/Anthropology 133 and graduate standing in Ecology or Anthropology. Topics of current analytical and methodological importance in cultural ecology. Examination of general issues in cultural ecology through study of human response to and influences on climate. [Same course as Anthropology 211.] Offered in alternate years.—F. McElreath

(change in existing course—eff. summer 15)

212A. Environmental Policy Process (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course in public policy (e.g., Environmental Studies 160) or environmental law (e.g., Environmental Studies 161); course in bureaucratic theory (e.g., Political Science 187 or Environmental Studies 166); course in statistics (e.g., Sociology 106 or Agricultural and Resource Economics 106). Introduction to selected topics in the policy process, applications to the field of environmental policy. Develops critical reading skills, understanding of frameworks of the policy process and political behavior, and an ability to multi-disciplinary approaches. Course will emphasize reading and discussing primary literature. Specific topics will reflect the research interests of UC Davis conservation biology faculty. W. [W]

(change in existing course—eff. summer 15)

212B. Environmental Policy Evaluation (4)

Lecture—1 hour; discussion—1 hour; seminar—2 hours. Prerequisite: intermediate microeconomics (e.g., Economics 100); Statistics 108 or Agricultural and Resource Economics 106; policy analysis (e.g., Environmental Studies 168A or the equivalent); Agricultural and Resource Economics 176. Methods and practices of policy analysis, philosophical and intellectual bases of policy analysis and the political role of policy analysis. [Same course as Environmental Science and Policy 212A.]—F. Arnold, Lubell

(change in existing course—eff. summer 15)

213. Population, Environment, and Social Structure (4)

Seminar—3 hours; term paper. Prerequisite: at least one course in population or human ecology, or in environment and natural resources. Relationships among population dynamics, resource scarcity and environmental problems, and social structure; focus on demographic content of global ecological models and simulations, ecological content of modern demographic theories, and debates about scarcity, inequality, and social conflict and change. Offered in alternate years.—S.

(change in existing course—eff. summer 15)

214. Marine Ecology: Concepts and Practice (3)

Lecture—1 hour; discussion—1.5 hours; fieldwork 1.5 hours. Prerequisite: graduate standing or one course in ecology, one course in evolution or genetics, and consent of instructor; survey course in marine ecology recommended. Critical review and analysis of concepts and methods in modern marine ecology at the interface of several fields of study including oceanography, evolution, behavior, and physiology. Emphasis on critical thinking, problem solving, and hypothesis testing. Three field trips required. Offered in alternate years.—F. Morgan, Williams

(change in existing course—eff. summer 15)

215. Ecology and Agriculture (4)

Lecture—3 hours; term paper. Prerequisite: Evolution and Ecology 11 or consent of instructor. Ecological principles as relevant to agriculture. Integration of ecological approaches into agricultural research to increase ecosystem functions and services. Topics include crop autecology with R. [Same among crops and pests, ecosystem and landscape ecology. Not open for credit to students who have completed Vegetable Crops 216 (Former course Vegetable Crops 216). Offered in alternate years.—F. Jackson

(change in existing course—eff. summer 15)

217. Conservation and Sustainable Development in Third World Nations (4)

[cancelled course—eff. fall 14]

219. Ecosystem Biogeochemistry (4)

Lecture—3 hours; laboratory/discussion—2 hours. Prerequisite: introductory courses in ecology/biology and soils are recommended, undergraduates accepted with consent of instructor. Multi-disciplinary analysis of energy and nutrient transfers within terrestrial ecosystems. Examination of processes and inter- and intra-system interactions between the atmospheric, biospheric, and hydrospheric. Laboratory section uses biogeochemical simulation models to examine case studies. [Same course as Soil Science 219.] Offered in alternate years.—S. Hoff

(change in existing course—eff. summer 15)

220. Spatio-Temporal Ecology (2)

Lecture/discussion—2 hours. Prerequisite: Popula-

tion Biology 200B or course 204 or Evolution and Ecology 104 or Environmental Science and Policy 121 or consent of instructor. Spatio-temporal ecological theory focusing on population persistence and stability, predator-prey and host-parasite interactions, species coexistence and diversity maintenance, including effects of environmental variation, spatial and temporal scales, historical traits and non-linear dynamics. Topics vary. (Same course as Popu-

lation Biology 220.) May be repeated one time for credit. Offered in alternate years. [S/U grading only.—W.]

(change in existing course—eff. summer 15)

232. Theoretical Ecology (3)

Lecture—3 hours. Prerequisite: course 204 or the equivalent, and Mathematics 16C or 21C, or one of courses 100 or 121 or Evolution and Ecology 101, and a strong mathematics background (Mathematics 22A-22B-22C or the equivalent). Examination of major conceptual and methodological issues in theoretical ecology. Model formulation and development will be emphasized. Topics will vary from year to year. May be repeated for credit. Offered in alternate years.—W. Hastings

(change in existing course—eff. summer 15)

233. Computational Methods in Population Biology (3)

Lecture/laboratory—2 hours; discussion/laboratory—1 hour. Prerequisite: A course in theoretical ecology (e.g., course 231 or an equivalent to Environmental Science and Policy 121 from your undergraduate institution) or consent of instructor; no programming experience required. Numerical methods for simulating population dynamics using the computational software package R. Emphasis placed on model formulation and development, theoretical concepts and philosophical principles to guide simulation efforts, model parameterization, and implementing simulations in the field. [Same course as Population Biology 233.] Offered in alternate years. [S/U grading only.—W. Basket, Schreiber

(change in existing course—eff. summer 15)


Lecture—2 hours; discussion—0.5 hours; labora-

tory—0.5 hours. Prerequisite: undergraduate genet-

ics and ecology/conservation biology courses recommended. Class size limited to 20 students; graduate students, 2nd and 3rd quarters; advanced undergraduates with consent of instructor. A. [A]

(change in existing course—eff. summer 15)
sent of instructor. Introduction to the field of applied ecological genetics to include applications in conserved ecology, population genetics, population biology, wildlife health and disease ecology. (Same course as Population Health and Reproduction 242)—F. (F.) Neale

243. Ecological Genomics (4)
Lecture/discussion—3 hours; paper or discussion. Prerequisite: course 242, or equivalent training in ecology and genetics according to the discretion of the instructors. Genomics concepts, technologies, and analyses for ecology research. Mixture of lecture, discussion of recent literature, hands-on training in data analysis and experimental design, and research proposal preparation and evaluation. One all-day field trip is required. —W. (W.) Miller, Ross-Ibarra, Whitehead

(new course—eff. fall 15)

245. Climate Change, Water and Society (4)
Lecture—4 hours. Class size limited to 25 students. Integration of climate science and hydrology with policy to understand hydroclimatology and its impact upon natural and human systems. Assignments: market structure and economic examination of climate and hydrologic science, paper that integrates course concepts into a research prospectus or review article. (Same course as Hydrologic Science 245 and Atmospheric Science 245.)—F. (F.) Fogg, Lubell, Ulrich

(new course—eff. spring 15)

280. Current Anthropology Journal Editorial Workshop (4)
Workshop—1 hour; independent study—3 hours. Prerequisite: consent of instructor. Students must enroll for all three quarters. Reading and offering workshop critiques of manuscripts submitted for publication, and reading and discussing of other relevant work in anthropology and human ecology. Track and edit published comments and authors' replies that accompany major features. Participation in the development of new sections for the electronic edition of the journal, including a "news and views" section and a debate section. (Same course as Anthropology 280.) May be repeated for 12 units of credit with consent of instructor. (S/U grading only)—F, W, S. (F, W, S.)

(change in existing course—eff. fall 14)

Economics

New and changed courses in Economics (ECN)

Upper Division

103. Economics of Uncertainty and Information (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100, Mathematics 16A and 16B or Mathematics 21A and 21B. Optimal decisions under uncertainty, expected utility theory, economics of insurance, asymmetric information, signalling in the job market, incentives and Principal-Agent theory, optimal search strategies and the reservation price principle.

(change in existing course—eff. summer 15)

106. Decision Making (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100; Mathematics 16A-16B or 21A-21B; Statistical literacy. One of C- or better in each course, or consent of the instructor. Descriptive and normative analysis of individual decision making, with applications to personal, professional, financial, and public policy decisions. Emphasis on decision making under uncertainty and over time. Heuristics and biases in the psychology of decisions; overcoming the limits of bounded rationality.

(change in existing course—eff. summer 15)

110A. World Economic History Before the Industrial Revolution (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1A and 1B. Development and application of analytical models to explain the nature and functioning of economic activity. Examples will be drawn from a variety of societies, including China, Canada, Indonesia, and Post-Columbian America. GE credit: SocSci | SS.

(change in existing course—eff. summer 15)

110B. World Economic History Since the Industrial Revolution (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1A, 1B and 110A. Development and application of analytical models to explain the nature and functioning of economies since the Industrial Revolution. Examples will be drawn from a variety of societies, including China, China, Germany, and India. GE credit: SocSci | SS.

(change in existing course—eff. summer 15)

111A. Economic History (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A-1B or consent of instructor. Survey of economic changes in the United States from Colonial times to 1865; reference to other regions in the Western Hemisphere. GE credit: SocSci | SS.

(change in existing course—eff. summer 15)

111B. Economic History (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A-1B, or consent of instructor. Survey of economic change in the United States from 1865 to the post World War II era. GE credit: SocSci | SS.

(change in existing course—eff. summer 15)

115A. Economic Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A and 1B. Major issues encountered in emerging from international poverty, including problems of growth and structural change, human welfare, population and economic development, and internal migration. Important issues of policy concerning international trade and industrialization. (Same course as Agricultural and Resource Economics 115A.) GE credit: SocSci | WC.

(change in existing course—eff. summer 15)

115B. Economic Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A and 1B. Major macroeconomic issues of developing countries. Issues include problems in generating capital, conduct of monetary and fiscal policies, foreign exchange and debt. Important issues of policy concerning international borrowing and external debt of developing countries. (Same course as Agricultural and Resource Economics 115B.) GE credit: SocSci | WC.

(change in existing course—eff. summer 15)

121A. Industrial Organization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A-1B; 100, or consent of instructor. An appraisal of the role of competition and monopoly in the American economy; market structure, conduct, and economic performance of a variety of industries. GE credit: SocSci.

(change in existing course—eff. summer 15)

121B. Industrial Organization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1A, 1B, 100, or consent of instructor. The study of antitrust and economic regulation. Emphasis on applying theoretical models to U.S. industries and case studies, including telecommunications, software, and electricity markets. Topics include natural monopoly, optimal and actual regulatory mechanisms, deregulation, mergers, predatory pricing, and market failures. GE credit: SocSci.

(change in existing course—eff. summer 15)

122. Theory of Games and Strategic Behavior (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100, Mathematics 16A and 16B or 21A and 21B or consent of instructor. Introduction to game theory. Explanation of the behavior of rational individuals with interacting and often conflicting interests. Non-cooperative and cooperative theory. Applications to economics, political science and other fields.

(change in existing course—eff. summer 15)

125. Efficiency in Energy Markets (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1A and 1B, Mathematics 16A and 16B and course 102 or consent of instructor; intended for advanced economics undergraduates. Pass One option to test previous knowledge; students are placed in management majors. Application of theoretical and empirical models to examine efficiency in energy production and use. Energy and environmental policy, market structure and policies, global climate change, optimal regulation, and real-world applications, e.g., California electricity crisis.

(change in existing course—eff. summer 15)

130. Public Microeconomics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100, or consent of instructor. Public expenditures; theory and applications. Efficiency and equity of competitive markets; externalities, public goods, and market failures; positive and normative aspects of public policy for expenditure, including benefit-cost analysis. Topics include government protection, pollution, education, poverty and crime.

(change in existing course—eff. summer 15)

131. Public Finance (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100. Economic burden of taxation; equity and efficiency considerations in tax design; structure and economic effects of the U.S. tax system (including personal income tax, corporate income tax, and property tax); tax loopholes; recent developments; tax reform proposals.

(change in existing course—eff. summer 15)

134. Financial Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1A, 1B, and 100; Mathematics 16A, Statistics 13 or 32, with grade of C- or better in each. Advanced topics in monetary and fiscal policy, market structure and policy, global climate change, optimal regulation, and real-world applications, e.g., California electricity crisis.

(change in existing course—eff. summer 15)

135. Money, Banks and Financial Institutions (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100, Mathematics 16A, Statistics 13. General background in principles of corporate finance as resource allocation over time; decision making under uncertainty and the role of information; capital market and interest rate structure; financial decisions. Students who have completed Agricultural and Resource Economics 171A may not receive credit for this course.

(change in existing course—eff. summer 15)

136. Topics in Macroeconomic Theory (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 101. Advanced Topics in macroeconomics theory. The course develops the theoretical and empirical analysis of a specific field of macroeconomics. Possible topics include, business cycle theo-
192. Internship (1-6)
Internship—3-18 hours. Prerequisite: upper division standing; internship experience off and on campus in all subject areas offered in the Department of Economics. Supervised by a member of the staff. May be repeated for credit. (P/NP grading only. GE credit: SE)

Graduate
200A. Microeconomic Theory (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 100A. Characteristics of market equilibrium under perfect competition, simple monopoly and monopsony. Emphasis on general equilibrium and welfare economics; the sources of market success and market failure. (Same course as Agricultural and Resource Economics 200A.)

200B. Macroeconomic Theory (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 200A. Uncertainty and information economics. Individual decision making under uncertainty. Introduction to game theory, with applications to markets with firms that are imperfect competitors or consumers that are imperfectly informed. (Same course as Agricultural and Resource Economics 200B.)

200C. Microeconomic Theory (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 101, Mathematics 21A, 21B, and 21C. Macro static theory of income, employment, and prices.

200D. Macroeconomic Theory (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 101, Mathematics 21A, 21B, and 21C. Microdynamic theory of income, employment, and prices.

210A. Economic History (4)
Lecture—discussion—4 hours. Economic history of the eastern hemisphere in the modern period. Medieval Europe or other regions may be studied, depending on student interest.

210B. Economic History (4)
Lecture—discussion—4 hours. The United States from Colonial times to the present. Other areas of the western hemisphere may be studied, according to student interest.

214. Development Economics (4)
Lecture—4 hours. Prerequisite: Agricultural and Resource Economics 100A, 100B, course 101; Agricultural and Resource Economics 204 or course 160A-160B recommended. Review of the principal theoretical and empirical issues whose analysis has highlighted recent economic developments. Analysis of economic development theories and development strategies and their application to specific policy issues in developing country contexts. (Same course as Agricultural and Resource Economics 214.)

215A. Microdevelopment Theory and Methods I (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200A or 204; course 240A recommended. Agricultural development theory, with a focus on microeconomics. Agricultural household behavior with and without market imperfections and uncertainty. Analytic of rural land, labor, credit and insurance markets, institutions, and contracts. (Same course as Agricultural and Resource Economics 215A.)

215B. Open Macroeconomics of Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Agricultural and Resource Economics/Economics 204 or 200D or 205, and 214 or 215A. Macroeconomic analysis of policy approaches regarding trade, monetary and fiscal issues, capital flows and debt are discussed in the macroeconomic framework of an open developing country. The basic analytical focus is real exchange rate and its impact on sectoral allocation of resources. (Same course as Agricultural and Resource Economics 215B.)

215C. Microdevelopment Theory and Methods II (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 215A. Extension of microeconomic theory and microeconomic methods. Agricultural growth and technological change; poverty and income inequality; multilateral, including village and regional models. Computable general equilibrium methods and applications. (Same course as Agricultural and Resource Economics 215C.)

215D. Environment and Economic Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 200A, 204 or Agricultural and Resource Economics 272. Introduction to course covering theoretical and empirical research on interactions between environmental resource use and economic development processes. Analysis of issues emerging at the interface of environmental and development economics. (Same course as Agricultural and Resource Economics 215D.) Offered irregularly.

221A. The Theory of Industrial Organization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200A, 200C. Game theory is used to analyze strategic interaction of firms in industries. Topics include models of competition, product differentiation, entry-deterring strategies, contractual arrangements, vertical control and antitrust issues. Offered irregularly.

221B. Empirical Analysis in Industrial Organization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 221A and 240B. Recent empirical work in industrial organization. Topics include empirical analysis of cartels, product differentiation, innovation and technological change, and imperfect competition in international markets. Offered irregularly.

221C. Industrial Organization and Regulation (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 221A and 240B. Optimal regulation of natural monopoly. Topics include regulatory mechanisms for single and multiple output firms under symmetric and asymmetric information, especially without regulation, the economic theory of regulation, and empirical studies of regulation and deregulation.

Pre-Fall 2011 General Education (GE): Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div—Domestic Diversity; Wrt—Writing Experience Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SE—Science and Engineering; SS—Social Sciences; AGCH—American Cultures; DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience Quarter Offered: F—Fall, W—Winter, S—Spring, J—Summer; 2015-2016 offering in parentheses.
230A. Public Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 230A. Emphasizes problems of finding an appropriate place for money in microeconomic/general equilibrium models. Consideration given to meaning of money, its relation to inflation and the real economy and to its role in models of finance. (Same course as Agricultural and Resource Economics 240A.)

230B. Public Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 230A. Advanced topics in economics of the public sector, with emphasis on current research. Topics may vary from year to year. (Same course as Agricultural and Resource Economics 240B.)

230C. Public Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200C and 240B. Topics in economic analysis and forecasting of time series models; trends and non-standard asymptotic theory; vector time series models and cointegration; time series models for panel data; additional topics such as bootstrap and semiparametric regression. (Same course as Agricultural and Resource Economics 240D.)

240A. Econometric Methods (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Statistics 133 and a course in linear algebra or the equivalent. Least squares, instrumental variables, and maximum likelihood estimation and inference for single equation linear regression model; linear restrictions, heteroskedasticity; autocorrelation; lagged dependent variables. (Same course as Agricultural and Resource Economics 240A.)

240B. Econometric Methods (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 240A. Topics include asymptotic theory and instrumental variables, pooled time-series cross-section estimation, seemingly unrelated regression, classical hypothesis tests, identification and estimation of dependent variable models. (Same course as Agricultural and Resource Economics 240B.)

240C. Time Series Econometrics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Probability theory; estimation, inference and forecasting of time series models; trend and non-standard asymptotic theory; vector time series methods and cointegration; time series models for higher order moments and transition data; state-space modeling and the Kalman filter. (Same course as Agricultural and Resource Economics 240C.)

240D. Cross Section Econometrics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Estimation and inference for nonlinear regression models for crosssection data; models for discrete data and for limited dependent variables; models for panel data; additional topics such as simultaneous equation models, cointegration, error-correction models, and qualitative and limited dependent variable models. (Same course as Agricultural and Resource Economics 240D.)

Graduate

397. Teaching of Economics (2)
Lecture/discussion—2 hours. Prerequisite: graduate standing in economics. Teaching of economics: methods of instruction, organization of course work, evaluation of effectiveness in preparation and implementation of course work, and analytical tools drawn primarily from economics.

Education

New and changed courses in Education (EDU)

Lower Division

110. Introduction to Schools (4)

Upper Division

100. Introduction to Schools (4)
Lecture—3 hours, field work—3 hours. Prerequisite: course 240A, 240B and 240C. Modern econometric techniques for time series data. Expand on topics covered in Economics 240A, 240B and 240C. Contents may vary from year to year. (Same course as Agricultural and Resource Economics 240D.)

201. Contemporary Economics Seminar (2)
Seminar—2 hours. Prerequisite: graduate standing in Economics. Seminar series on topics of current interest. May be repeated for credit. (S/U grading only).—F, S, F, S

205. Topics in Cross Section Econometrics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 240A, 240B and 240D. Modern econometric techniques for time series data. Expand on topics covered in Economics 240A, 240B and 240D. Contents may vary from year to year. (Same course as Agricultural and Resource Economics 240F.)

260A. International Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200A or 204. Theory of trade determinants; gains from trade; tariffs and effective protection; economic unions.

260B. International Economics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 200A, 240A and 240D. Balance of payments adjustment mechanisms; foreign exchange market theories of balance of payments policy and international monetary mechanisms. Offered irregularly.

260CN. International Investment and Trade (4)
Seminar—4 hours. Prerequisite: course 260A. Analysis of foreign investment and its links to trade; theories of the firm as they relate to firm’s export and investment decisions; and an introduction to the political economy of trade policies.

260D. Topics in International Macroeconomics (4)
Seminar—4 hours. Prerequisite: course 260B or consent of instructor. Survey of current literature in international macroeconomic theory. Offered irregularly.

260E. Topics in International Trade (4)
Seminar—4 hours. Prerequisite: course 260A, 260B. Current literature in international trade theory.

260F. International Macroeconomic Policy (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 260B. Theory and practice of international macroeconomic policy. Topics include exchange rate regimes, international financial institutions, crises and current topics.

291. Contemporary Economics Seminar (2)
Seminar—2 hours. Prerequisite: graduate standing in Economics. Seminar series on topics of current interest. May be repeated for credit. (S/U grading only).—F, S, F, S

Education

New and changed courses in Education (EDU)

Lower Division

110. Introduction to Schools (4)
Lecture—3 hours; field work—3 hours. Limited to 26 students per section. Exploration of how students learn and develop understanding in science and mathematics classrooms. Introduction to case studies and interview techniques and their use in K-6 classrooms to illuminate factors that affect student learning. (Same course as Geology 81.) GE credit: SS, VI, WE.—F, W, S, F, W, S) Stevenson, Latimer

Upper Division

100. Introduction to Schools (4)

110. Educational Psychology: General (4)
Lecture/discussion—4 hours. Prerequisite: Psychology 1; upper division standing. Learning processes, cognitive development, individual differences, testing and evaluation. GE credit: SocSci, Writ | SS, WE.—F, W, S, F, W, S) Ching, Martin, Mundy, Passmore, Quijada, White

119. The Use and Misuse of Standardized Tests (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 110 or consent of instructor. Principles underlying educational and psychological testing. Purposes of testing for individual achievement and evaluation of school programs. Interpretation and misinterpretations of outcomes. Analysis of SAT, GRE and other common tests. Experience in test administration and outcome interpretation. GE credit: SocSci, Writ | QL, SS, WE.—S, S) Abedi, Welsh

120. Philosophical and Social Foundations of Education (4)

121. Introduction to Education Policy Analysis: Tools, Methods and Frameworks (4)
Lecture—3 hours; discussion—1 hour. Introduces students to the field of education policy analysis with a specific emphasis on the quantitative frameworks and analytical tools drawn primarily from economics.
and statistics that are used to guide and inform educational policymaking. GE credit: SocSci | QL, SS. — F, W, S. (F.) Mendle, Pomeroy, White (change in existing course—eff. fall 14)

130. Issues in Higher Education (4)
Lecture—discussion—3 hours; field work—3 hours. Prerequisite: upper division standing or consent of instructor. Examination of current issues in higher education and of some practical implications of varying philosophical approaches to the role of the university. GE credit: SocSci | SS, WE. — S. (J.) Cuellar, Gonzalez
(change in existing course—eff. summer 15)

147. Anglos, Latinos and the Spanish Black Legend: The Origins and Educational Implications of Anti-Hispanic Prejudice (4)
Lecture/discussion—3 hours; field work; term paper. Prerequisite: upper division standing or consent of instructor. Examination of anti-Hispanic prejudice in the United States focusing on the “Black Legend,” a 16th Century anti-Spanish myth underpinning the discipline of race in America. Explores the development of the legend’s presence in contemporary American society through interviews and analysis of school textbooks. [Same course as Spanish 147.] Offered in alternate years. GE credit: Wrt | ACGH, AH, DD, WE. — (F.) González
(change in existing course—eff. summer 15)

151T. Language Development in the Chicano Child (3)
Lecture/discussion—3 hours. Prerequisite: some knowledge of Spanish and linguistics recommended. Open to Graduate MA Credential candidates only. Bilingualism, first and second language acquisition, bilingual education, language assessment, Chicano Spanish and the role of dialect varieties in the classroom. Offered for credit to students who have completed course 151. — F. (J.) Fortes
(change in existing course—eff. fall 14)

173. Language Development (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Linguistics 103A or consent of instructor; Linguistics 103B. Theory and research on children’s acquisition of their native language, including the sound system, grammar, and vocabulary. Explores the development of the child’s language system and the role of cultural and sociolinguistic factors. GE credit: SocSci | SS, W, S. (F.) Tolmie, Mendle, Pomeroy, White

180A. Computers in Education (3)
Lecture/discussion—1 hour; laboratory—2 hours; project—3 hours. Prerequisite: acceptance in Teacher Credential Program. Restricted to Teaching Credential Majors. Applications of computers in education as instructional, intellectual, and communication tools. (Deferred grading only, pending completion of sequence.)—F. (J.) Mendle, Pomeroy, White (change in existing course—eff. summer 15)

180B. Computers in Education (3)
Lecture/discussion—1 hour; laboratory—2 hours; project—3 hours. Prerequisite: acceptance in Teacher Credential Program; successful completion of course 180A. Restricted to Teaching Credential Majors. Applications of computers in education as instructional, intellectual, and communication tools. (Deferred grading only, pending completion of sequence.)—W. (W.) Mendle, Pomeroy, White (change in existing course—eff. summer 15)

180C. Computers in Education (3)
Lecture/discussion—1 hour; laboratory—2 hours; project—3 hours. Prerequisite: acceptance in Teacher Credential Program; successful completion of course 180B. Restricted to Teaching Credential Majors. Applications of computers in education as instructional, intellectual, and communication tools. (Deferred grading only, pending completion of sequence.)—W. (W.) Mendle, Pomeroy, White (change in existing course—eff. summer 15)

181. Teaching in Science and Mathematics (2)
Lecture/discussion—2 hours; field work—2 hours. Prerequisite: major in mathematics, science, or engineering; or completion of a one-year sequence of science courses or two quarters of calculus instruction. GE credit: SS, WE. — F, W, S. (F.) Mendle, Pomeroy, White (change in existing course—eff. summer 15)

185. Learning in a Digital Age: Information, Schooling, and Society (4)
Lecture/discussion—2 hours, lecture/laboratory—2 hours. Focus on the changing nature of learning in a digital age: social media, ubiquitous connectivity, online education, electronic communication, writing, gaming, and tools that will be driven from major recent works detailing fundamental shifts in information, schooling, and society. Offered in alternate years. GE credit: SocSci | OL, VL, SS. — (S.) Ching
(change in existing course—eff. summer 15)

200. Educational Research (4)
Lecture—2 hours; discussion—2 hours. Prerequisite: introductory statistics and graduate standing in education or consent of instructor. Defining educational research questions, reviewing relevant literature, developing research designs, developing research instruments, selecting appropriate data analysis procedures, and writing research projects. A case problem will provide practice in designing and reporting research. — F. (J.) Welsh
(change in existing course—eff. summer 15)

202N. Computer Analysis of Qualitative Data (4)
Lecture—3 hours; laboratory—2 hours. Prerequisite: graduate standing or upper division standing with consent of instructor. Class size limited to 12 students. Critical and practical understanding of how to use computer programs to analyze qualitative data (text, images, and videotape) in conducting social research. Offered in alternate years. (change in existing course—eff. fall 14)

203. Educational Testing and Evaluation (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Introduces the theoretical assumptions underlying traditional test construction, as well as the basic statistical principles involved in the design, evaluation, and interpretation of standardized tests. Also introduces the debates surrounding the uses of different kinds of tests and evaluation tools. — S. (J.) Abedi, Welsh
(change in existing course—eff. summer 15)

206A. Inquiry into Classroom Practice: Traditions and Approaches (2)
Lecture/discussion—2 hours; fieldwork. Prerequisite: consent of instructor. Open to Graduate Teaching Credential students. Introduction to traditions and approaches of teachers conducting research in their own classrooms: purposes, focal areas, methods of data collection and analysis, and written genre conventions. — W. (W.) Holmes, Athanases
(change in existing course—eff. summer 15)

206B. Inquiry into Classroom Practice: Applications of Teacher Research Approaches (4)
Lecture/discussion—3 hours; fieldwork—1 hour. Prerequisite: satisfactory completion of course 206A or consent of instructor. Open to Graduate Teaching Credential students. Analysis and application of teacher research through the development, implementation and evaluation of a shorter-term classroom research-based intervention. Particular attention to research that enhances learning of English language learners and under-performing students. — S. (J.) Athanases, Ballard, Falts, Passmore, White (change in existing course—eff. summer 15)

206C. Inquiry into Classroom Practice: Study Design (4)
Seminar—3 hours; fieldwork—1 hours. Prerequisite: satisfactory completion of course 206B or consent of instructor. Open to Graduate MA Credential students only. Proposal development for classroom-based inquiry designed to address student learning needs. Mixed methods research design and preliminary data collection approaches. Design and application of baseline student assessment for proposal development. Literature review. Data collection in K–12 classrooms required. — F. (J.) Ambrose, Falts, Wallace
(change in existing course—eff. summer 15)

206D. Inquiry into Classroom Practice: Data Analysis and Reporting Research (4)
Seminar—2 hours; fieldwork—1 hour; extensive writing or discussion. Prerequisite: satisfactory completion of course 206C or consent of instructor. Open to Graduate MA Credential students. Support of the inquiry begun in course 206C through continuous collaborative critique and feedback resulting in the writing and presentation of a research study. Open to Graduate MA Credential students. — W. (W.) Ambrose, Falts, Wallace
(change in existing course—eff. summer 15)

207. Concepts of the Curriculum (4)
Lecture—2 hours; discussion—2 hours. Prerequisite: graduate standing or consent of instructor. Development of the skills of philosophical analysis and argument for the establishment of a point of view, in the consideration of curriculum theory and practice. Classical and contemporary approaches to subject matter and activity emphases, hidden curriculum, and moral education. Open to Graduate MA Credential students only. — F. (J.) Welsh
/change in existing course—eff. summer 15)

209. Image-based Field Research (4)
Lecture/discussion—3 hours; fieldwork—2 hours. Prerequisite: graduate standing or upper division standing with consent of instructor. Critical and practical understanding of video tape and still photography as resources for ethnographic field research in schools and other social settings. (change in existing course—eff. summer 15)

210. The Psychology of School Learning (4)
(change in existing course—eff. summer 15)

211. Sociocultural and Situative Perspectives on Learning and Cognition (4)
Lecture/discussion—3 hours; extensive writing—1 hour. Prerequisite: graduate standing or consent of instructor. Sociocultural and situative theories of cognition and learning. Major ideas of S.L. Vygotsky, followed by modern perspectives on situated cognition, cognitive apprenticeship, situated learning, communities of practice, cultural-historical activity theory,
and distributed cognition. Implications of each theoretical perspective for educational practice. Offered in alternate years. —[S] Ching, White

213. Individual Assessment (4)
Lecture—4 hours. Prerequisite: courses 114 and 219, admission to school psychology credential program. Theories of intellectual functioning and the measurement of cognitive abilities in school-aged children. Supervised practicum in administration and scoring of contemporary tests for children including the WISC-R, the WAIS-R, the Stanford Binet, the McCarthy Scales of Children’s Ability. Offered in alternate years. —[S] Mundy

215. Research on Achievement Motivation in Education (4)
Seminar—3 hours, term paper. Prerequisite: graduate standing in Education or consent of instructor. Analysis and critique of recent research on cognitive processes related to achievement motivation in school settings. Topics include self-determination theory, attribution theory, goal theory, intrinsic and extrinsic motivation, learned helplessness. Psychological aspects of motivation, culture, and research design. Offered irregularly.

220. Concepts and Methods of Policy Analysis (4)
Seminar—3 hours, fieldwork, term paper. Prerequisite: graduate standing. Introduction to concepts and methods of policy analysis. Emphasis on the relationship between educational issues and problems, policy development, constructing persuasive policy analyses; issues related to policy process. Offered irregularly.

221. Culture and Social Organization of Schools (4)
Seminar—4 hours. Prerequisite: graduate standing or consent of instructor. Culture and social organization of schools. Examines perspectives of social researchers, educational policymakers, and school members on their role for educational research, policy, and practice.

222. School Change and Educational Reform (4)
Lecture/discussion—2 hours; seminar—2 hours. Prerequisite: graduate standing in Education with course 129 or the equivalent. Analysis of models, processes, and case studies of school change and educational reform with respect to variable characteristics of schools and schooling, planned and unplanned change, the moral evaluation of school change, and the role of educational research. Offered irregularly.

223. Education and Social Policy (4)
Seminar—4 hours. Prerequisite: graduate standing in Education or consent of instructor. Focuses on understanding the social and political context of education in the U.S. and California and how education policy is formed in the broader public arena. Develops skills in educational policy analysis. (Former course 237.) Offered in alternate years. —Hart

225. Education Policy and Law (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Examination of law as an instrument of social policy. Specific focus on the legalization of educational decision making, its causes, dimensions, and effects on administrative and teacher authority. —Tsun

228. Politics and Governance of Education (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Examination of political power, representation, influence, decision-making and intergovernmental relations in the public schools. Offered in alternate years. —[S] Ching, White

229. Education Finance Policy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Examination of (1) United States financing public education, (2) the relationship between school finance and education policy, and (3) the relationship between education finance and education practice. Offered irregularly. —Rose

230. Special Topics in Education Policy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Selected topics in education policy. Designed to facilitate preparation for the student to design a thesis or dissertation. Students will critically analyze scholarly work including their own work in progress. May be repeated for credit when topic differs. —F, W, S. (F, W, S.) Cuellar, Gee, Hart, Kurlaender, Martorell, Quijada

236. Application of Hierarchical Linear Models in Education Research (4)
Lecture—2 hours; seminar—2 hours; term paper. Prerequisite: course 204A or similar course with permission of the instructor. Application of hierarchical linear models in education research across multiple areas, such as policy, curriculum, and assessment. Develop working knowledge of hierarchical linear modeling and an understanding of its use in existing research as well as student’s work. Offered in alternate years. —[F] Gee

237. Survey Research Methods (4)
Lecture/discussion—3 hours; field work—1 hour; term paper. Prerequisite: course 114 or equivalent. Theories, principles and application of survey research methodology. Students develop, validate, and administer an instrument, conduct representative samples; conduct focus groups; and collect, organize, and analyze survey data. Familiarity with introductory concepts in descriptive and inferential statistics is assumed. Offered irregularly. —[W] Abedi, Welsh

239. Interview Methods (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 201 or equivalent course recommended. Introduction to qualitative interviewing, focused in particular on narrative and self-story as both practical method and theoretical stance. Students complete a case-focused interview project during the course: designing an interview protocol, conducting the interview, transcribing, analyzing, and presenting their research. Offered in alternate years. —Ching

245. Theory and Research in Early Literacy (4)
Seminar—3 hours; field work—1 hour. Prerequisite: graduate standing or consent of instructor. Analysis of children’s initial processes in learning to read extending from the preschool years into second grade. Topics include emergent literacy, phonological awareness, vocabulary, comprehension, decoding, spelling, vocabulary, comprehension, second language reading, assessment, intervention, and instruction. Offered irregularly. —Torkovich

246. Reading as a Social and Cultural Process (4)
Lecture—3 hours; field work—1 hour. Prerequisite: course 211 recommended or consent of instructor. Recent theoretical and empirical work on reading in social contexts. Topics include reading as an individual interactive process; reading as a social and cultural process; critical perspectives on reading; implications of contrastive theoretical perspectives for curriculum and instruction in reading. Offered irregularly.

247. Research on Response to Culturally Diverse Literature, K-12 (4)
Lecture—3 hours; field work—1 hour. Research on response to culturally diverse literature in classrooms and other K-12 settings. Topics include reader response theories, values in expanding the literary canon, problems of cultural authenticity, resistance to multicultural literature, and instruction for diverse texts and learners. Offered in alternate years. —Althanes

248. Academic Language and Literacies (4)
Seminar—3 hours; field work—3 hours. Prerequisite: graduate standing or consent of instructor. Explorations of theories and research on academic language and literacies for the schooling of first and second language learners. Students develop basic qualitative research methods to collect and analyze classroom language and literacy data. Offered in alternate years. —Enright

253. Language and Literacy in Linguistic Minorities (3)
Seminar—2 hours; field work—2 hours. Prerequisite: familiarity with another language and culture; graduate standing. Analysis and application of research on oral language development and literacy in language minority students, through the development, implementation, and evaluation of research-based language arts curriculum. —S. (S.) Merino

255. Curriculum Development and Evaluation in Mathematics (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics or consent of instructor. Analysis of curricular issues and goals in mathematics education, including long-term trends, current status and influences, proposed changes, and evaluation issues. Selected curriculum projects are analyzed and reexamined. Offered irregularly. —Ambrose, White

256A. Research in Mathematics Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics, or consent of instructor. Examination of research process in mathematics education; review of critical productive problems identified by researchers; evolution of trends, issues, theories and hypotheses in various areas of mathematics education research. Course emphasizes foundations. Offered irregularly. —Ambrose, White

256B. Research in Mathematics Education (4)
Seminar—4 hours. Prerequisite: graduate standing in Education with upper division course work in mathematics, or consent of instructor. Examination of research process in mathematics education; review of critical productive problems identified by researchers; evolution of trends, issues, theories and hypotheses in various areas of mathematics education research. Course emphasizes foundations. Offered irregularly. —Ambrose, White
260. The Modern History of Science Education (4) Seminar—4 hours. Prerequisite: graduate standing in Education with upper division coursework in science, or consent of instructor. History of curricular issues and goals in science education from the late 19th century forward, including long-term trends, current status and influences, proposed changes, and evaluation issues. National science standards and curriculum projects. Offered irregularly. —Passmore
(change in existing course—eff. summer 15)

262A. Research Topics in Science Education I (4) Seminar—4 hours. Prerequisite: graduate standing in Education with upper division coursework in science, or consent of instructor. Research process and product in science education; review of critical science education issues; evolution of trends, theories and hypotheses in various areas of science education research. Survey of current major research in science education. Offered irregularly. —Passmore
(change in existing course—eff. summer 15)

262B. Research Topics in Science Education II (4) Seminar—4 hours. Prerequisite: course 262A and graduate standing in Education with upper division coursework in science. Current research issues and activities in science education: status, trends, theories and hypotheses. Formulation of research questions, design of studies and critical, in-depth review of literature related to the student’s research interests. —Passmore
(change in existing course—eff. summer 15)

264. Scientific Literacy and Science Education Reform (4) Seminar—4 hours. Prerequisite: graduate standing in Education with formal or informal teaching recommended. Research on teacher preparation in university credential programs and on professional development of in-service teachers, with special attention to teacher preparation for work with culturally and linguistically diverse youth. Offered irregularly. —Athanases
(change in existing course—eff. summer 15)

270. Research on Teacher Education and Development (4) Seminar—3 hours, project. Prerequisite: graduate standing in Education with formal or informal teaching recommended. Research on teacher preparation in university credential programs and on professional development of in-service teachers, with special attention to teacher preparation for work with culturally and linguistically diverse youth. Offered irregularly. —S. Atanases
(change in existing course—eff. summer 15)

271. Supervision of Student Teachers: Research, Theory & Practice (4) Lecture/discussion—3 hour, fieldwork—1 hour. Prerequisite: graduate standing. Research, theory and practice in the supervision and preparation of teachers. Practice in the supervision of candidates in university teaching credential programs and on professional development of in-service teachers, with special attention to teacher preparation for work with culturally and linguistically diverse youth. Offered irregularly. —S. Atanases
(change in existing course—eff. summer 15)

275A. Effective Instruction: Curriculum and Assessment-Theory, Research, and Practice (2) Lecture/discussion—2 hours. Prerequisite: acceptance in Teacher Credential Program. Restricted to Teaching Credential majors. Examination of contemporary theories of curriculum development, research about the relationship among instructional planning, classroom assessment; and student learning to guide teaching practice. —F. W. (F, W.) Cannon, Fortes, Holmes
(change in existing course—eff. summer 15)

275B. Effective Instruction: English Language Development and Instructing English Language Learners (2) Lecture/discussion—2 hours. Prerequisite: acceptance in the Teaching Credential program; successful completion of course 275A. Restricted to Teaching Credential majors. Analysis and application of English language acquisition and development research to teaching practice. Particular attention to research that enhances learning of English language learners and under-performing students. —F. W. (F, W.) Cannon, Fortes, Holmes
(change in existing course—eff. summer 15)

291. Proseminar in Education (4) Seminar—3 hours; fieldwork—3 hours. Prerequisite: admission to the Ph.D. program in Education. Professional induction into educational research field and Graduate Group in Education at UC Davis. Introduction to landscape of educational research methodologies, purposes and theories. Analysis of debates within field; K-12 educational outreach efforts at UC Davis. May be repeated two times for credit. May take the course one time as a MA student and one time as a Ph.D. student. —F. (F)
(change in existing course—eff. fall 15)

294. Special Topics in Science, Agriculture and Mathematics Education (4) Seminar—3 hours, term paper; project. Prerequisite: graduate standing. Critical study of special topics of research relevant to science, agricultural and mathematics education. Students and faculty present work in progress on a major research project, and critically analyze and discuss one another’s developing scholarly work. May be repeated for credit when topic differs. —W. S. (W, S.) Ambrose, Ballard, Martin, White
(change in existing course—eff. summer 15)

295. Special Topics in Learning and Mind Science (4) Seminar—3 hours, term paper. Prerequisite: graduate standing or consent of instructor. Critical study of selected issues in the learning sciences, neurodevelopmental disorders, and psychometrics and measurement as they relate to education. May be repeated for credit when topic differs. Offered irregularly. —Abedi, Carter, Ching, Martin, Mundy, Salari, White
(change in existing course—eff. summer 15)

Professional

301. Reading in the Secondary School (4) Discussion—4 hours. Prerequisite: graduate standing, enrollment in the secondary credential program, or consent of instructor. Principles, procedures, and materials to help secondary school teachers improve the reading competence of students. Strategies for enhancing learning through reading and writing in all disciplines, with special attention to linguistically diverse populations. —F. W. (F, W.) Fallis, Martinez
(change in existing course—eff. summer 15)

301A. Teaching Literacy in High School Contexts (2) Lecture/discussion—2 hours. Prerequisite: graduate standing, enrollment in the secondary credential program, or consent of instructor. Restricted to students enrolled in the secondary credential program. Focuses on secondary school literacy practices and strategies for engaging English-speaking and bilingual students with textual, image, and digital literacies across content areas. Covers reading and writing, the Common Core and Language Proficiency standards. —F. W. (F, W.) Fallis
(new course—eff. fall 15)
new and changed courses in engineering (eng)

lower division

2. creativity and entrepreneurship for engineers (3)

talk 3 hours. introduction to entrepreneurial thinking from an engineer's perspective. focus on identifying entrepreneurial opportunities, developing prototypes, and generating business models. emphasis on developing a creative and entrepreneurial mindset. ge credit: scieng or socsci | se or ss. — f, w. s. (f, w, s.) arzola

(new course—eff. fall 15)

35. statics (4)

lecture—3 hours; discussion—1 hour. prerequisite: physics 9a-c or better and mathematics 21d-c or better concurrently. force systems and equilibrium conditions with emphasis on engineering problems. ge credit: scieng | se. — f, w, s. (f, w, s.) arzola

(change in existing course—eff. spring 16)

98. directed group study (1-4)

restricted to college of engineering students only. (p/np grading only.) may be repeated for credit up to three times when content differs.

(change in existing course—eff. fall 14)

upper division

160. environmental physics and society (3)

lecture—3 hours. prerequisite: physics 9d, 5c, or 10 or 1b and mathematics 16b or the equivalent. impact of human kind on the environment will be discussed from the point of view of the physical sciences. calculations based on physical principles will be made, and the resulting policy implications will be considered. in the college of engineering, students may receive only one unit of credit towards the technical electives requirement. (same course as physics 160.) ge credit: scieng or socsci | se, sl. — s. (s.) craig, jungerman

(change in existing course—eff. winter 16)

engineering: aerospace science and engineering

new and changed courses in aerospace science and engineering (eae)

lower division

10. from the wright brothers to drones and quadcopters (2)

lecture—2 hours. history of aircraft and its influence on society. topics covered will include unmanned aerial vehicles, safety considerations, economics and privacy issues. aerodynamics, stability and control will also be introduced. (p/np grading only.) ge credit: scieng or socsci | se or ss. — su. (su.)

(new course—eff. summer 15)

140. rocket propulsion (4)

lecture—4 hours. prerequisite: c or better in mechanical engineering 106. restricted to upper division standing. fluid and thermodynamics of rocket engines, liquid and solid rocket propulsion.

space propulsion concepts and space mission requirements. not open for credit to students who have taken identical course 189a prior to fall quarter 2013. ge credit: scieng | se. — s. (s.) delplanque

(change in existing course—eff. winter 16)

engineering: applied science—davis

graduate

205C. Mathematical Methods (4)

cancelled course—eff. fall 14

209. Linear Modeling Techniques (4)

cancelled course—eff. fall 14

210A. Numerical Methods in Applied Science (4)

cancelled course—eff. fall 14

210B. Numerical Methods in Applied Science (4)

cancelled course—eff. fall 14

210C. Numerical Methods in Applied Science (3)

cancelled course—eff. fall 14

211A. Numerical Solution of Partial Differential Equations I (3)

cancelled course—eff. fall 14

211B. Numerical Solution of Partial Differential Equations II (3)

cancelled course—eff. fall 14

211C. Numerical Solution of Partial Differential Equations III (3)

cancelled course—eff. fall 14

217A. Applied Computational Science (3)

cancelled course—eff. fall 14

217B. Applied Computational Science (3)

cancelled course—eff. fall 14

218. Signal Processing (3)

cancelled course—eff. fall 14

219. Wavelets and Their Applications (3)

cancelled course—eff. fall 14

220A. Artificial Neural Nets I (3)

cancelled course—eff. fall 14

220B. Artificial Neural Nets II (3)

cancelled course—eff. fall 14

221. Genetic Algorithms and Optimization (3)

cancelled course—eff. fall 14

225. Computational Structures for Signal and Image Processing and Graphics (3)

cancelled course—eff. fall 14

226. Practical Data Communications in Digital Media (3)

cancelled course—eff. fall 14

228A. Properties of Matter (3)

cancelled course—eff. fall 14

228B. Properties of Matter (3)

cancelled course—eff. fall 14

228C. Properties of Matter (3)

cancelled course—eff. fall 14

231A. Applied Quantum Mechanics (4)

cancelled course—eff. fall 14

231B. Applied Quantum Mechanics (4)

cancelled course—eff. fall 14

233A. Theory and Applications of Solid-State Physics (3)

cancelled course—eff. fall 14

233B. Theory and Applications of Solid-State Physics (3)

cancelled course—eff. fall 14

233C. Theory and Applications of Solid-State Physics (3)

cancelled course—eff. fall 14

234A. Applied Electromagnetics I (3)

cancelled course—eff. fall 14

234B. Applied Electromagnetics II (3)

cancelled course—eff. fall 14

234C. Applied Electromagnetics III (3)

cancelled course—eff. fall 14

235. Biophotonics in Medicine and the Life Sciences (3)

cancelled course—eff. fall 14

262A. Atomic and Molecular Interactions (3)

cancelled course—eff. fall 14

262B. Atomic and Molecular Interactions (3)

cancelled course—eff. fall 14

262C. Atomic and Molecular Interactions (3)

cancelled course—eff. fall 14

263A. Quantum Statistics of Light (3)

cancelled course—eff. fall 14

263B. Quantum Theory of Optics (3)

cancelled course—eff. fall 14

264A. Classical Optics I (3)

cancelled course—eff. fall 14

264B. Classical Optics II (3)

cancelled course—eff. fall 14

264C. Classical Optics III (3)

cancelled course—eff. fall 14

271. Optical Methods in Biophysics (4)

cancelled course—eff. spring 14

285A. Physics and Technology of Microwave Vacuum Electron Beam Devices I (4)

cancelled course—eff. winter 16

285B. Physics and Technology of Microwave Vacuum Electron Beam Devices II (4)

cancelled course—eff. spring 16

285C. Physics and Technology of Microwave Vacuum Electron Beam Devices III (4)

cancelled course—eff. fall 15

Quarter Offered: F, W, S. (S.) summer; 2015-2016 offering in parentheses

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div—Domestic Diversity; Wrt—Writing Experience

American Cultures; Domestic Diversity; Oral Skills; Quantitative; Scientific; Visual; World Cultures; Writing Experience
Engineering: Biological Systems

New and changed courses in Engineering: Biological Systems (EBS)

Lower Division


147. Runoff, Erosion and Water Quality Management in the Tahoe Basin (3) Lecture, laboratory—30 hours; fieldwork—15 hours; discussion—10 hours; term paper. Prerequisite: Physics 7B or 9B, Mathematics 16C or 21C, Civil and Environmental Engineering 142, or Hydrologic Sciences 141 or Environmental and Resource Sciences 100. Practical hydrology and runoff water quality management from Tahoe Basin slopes. Development of hillslope and riparian restoration concepts, modeling and applications from physical science perspectives including precipitation-runoff relationships, sediment transport, and detention ponds. Five days of instruction in Tahoe City. (Same course as Hydrologic Science 147.) GE credit: SciEng | QL, SE, SL — Grismer (change in existing course—eff. winter 15)

189A. Special Topics in Biological Systems Engineering: Agricultural Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Agricultural Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189B. Special Topics in Biological Systems Engineering: Agricultural Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Agricultural Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189C. Special Topics in Biological Systems Engineering: Biomedical Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Biomedical Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189D. Special Topics in Biological Systems Engineering: Biotechnical Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Biotechnical Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189E. Special Topics in Biological Systems Engineering: Ecological Systems Engineering Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Ecological Systems Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189F. Special Topics in Biological Systems Engineering: Food Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Food Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189G. Special Topics in Biological Systems Engineering: Forest Engineering (1-5) Prerequisite: upper division standing in engineering; consent of instructor. Special topics in Forest Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189H. Special Topics in Biological Systems Engineering: Irrigation and Drainage (1-5) Prerequisite: consent of instructor. Special topics in Irrigation and Drainage. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Graduate

289A. Selected Topics in Biological Systems Engineering: Animal Systems Engineering (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Animal Systems Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289C. Selected Topics in Biological Systems Engineering: Biomedical Engineering (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Biomedical Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289D. Selected Topics in Biological Systems Engineering: Energy Systems (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Energy Systems. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289E. Selected Topics in Biological Systems Engineering: Environmental Quality (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Environmental Quality. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289F. Selected Topics in Biological Systems Engineering: Food Engineering (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Food Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289G. Selected Topics in Biological Systems Engineering: Forest Engineering (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Forest Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289H. Selected Topics in Biological Systems Engineering: Irrigation and Drainage (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Irrigation and Drainage. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289I. Selected Topics in Biological Systems Engineering: Plant Production and Harvest (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Plant Production and Harvest. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289J. Selected Topics in Biological Systems Engineering: Sensors and Actuators (1-5) Variable—1-5 hours. Prerequisite: consent of instructor. Special topic in Sensors and Actuators. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Engineering: Biomedical

New and changed courses in Engineering: Biomedical Engineering (BIM)

Lower Division

1. Introduction to Biomedical Engineering (2) Lecture—2 hours. Pass One open to freshmen. Introduction to the field of biomedical engineering with examples taken from the various areas of specialization within the discipline. Areas include (1) nano-bioengineering, (2) cellular bioengineering, (3) tissue bioengineering, (4) computational bioengineering, and (5) biomedical imaging. GE credit: SciEng | QL, SE, SL — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

20. Fundamentals of Bioengineering (4) Lecture—3 hours; discussion—1 hour. Prerequisite: C- or better in Chemistry 2B and Mathematics 21D; Physics 9B. Basic principles of mass, energy and momentum conservation equations applied to solve problems in the biological and medical sciences. Only two units of credit to students who have previously taken Chemical Engineering 51, Engineering 105. GE credit: SciEng | QL, SE, VL — S. (S.) Choi (change in existing course—eff. summer 15)

Upper Division

105. Probability and Statistics for Biomedical Engineers (4) Lecture—3 hours; discussion—1 hour. Prerequisite: C- or better in Mathematics 21D; Engineering 6 (may be concurrent). Concepts of probability, random variables and processes, and statistical analysis
143. Biomolecular Systems Engineering: Synthetic Biology (4)
Lecture—4 hours; discussion—1 hour. Prerequisite: Biological Sciences 2A; Mathematics 16C or Mathematics 21C. Includes design, construction and characterization of molecular systems. Protein and biological parts standardization, computer aided design, gene synthesis, directed evolution, protein engineering, issues of human practice, biological safety, security, innovation, and regulation in alternate years. GE credit: SciEng | SE — (S.) Facciotti (change in existing course—eff. summer 15)

161A. Biomolecular Engineering (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 2A; Chemistry 8B. Restricted to upper division standing. Introduction to the basic concepts and techniques of biomolecular engineering such as recombinant DNA technology, protein engineering, and molecular diagnostics. Three units of credit for students who have taken course 161S. GE credit: SciEng | QL, SE — (F.) Tan (change in existing course—eff. summer 15)

161L. Biomolecular Engineering Laboratory (3)
Lecture—4.5 hours; lecture/discussion—1.5 hours. Prerequisite: course 161A. Introduction to the basic techniques in biomolecular engineering. Laboratory and discussion sessions will cover basic techniques in DNA cloning, bacterial cell culture, gene regulation, protein expression, and data analysis. Offered irregularly. GE credit: SciEng | QL, SE — (F.) Tan (change in existing course—eff. summer 15)

161B. Biomolecular Engineering: Brief Course (1)
Lecture—1 hour. Prerequisite: Biological Sciences 2A; Chemistry 8B; course 161L (may be taken concurrently). Basic concepts and techniques in biomolecular analysis, recombinant DNA technology, and protein purification. Open for credit to students who have taken course 161A. Offered irregularly. GE credit: SciEng | QL, SE — (change in existing course—eff. summer 15)

163. Bioelectricity, Biomechanics, and Signaling Systems (4)
Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: C- or better in course 20; course 116 or Neurobiology, Physiology, & Behavior 101. Fundamentals of bioelectricity in cells, the cell signaling system, and mechanical force generation in muscle. Concepts and techniques to promote learning of important concepts in hands-on projects using neurons and muscle as microcosms. GE credit: SciEng | SE — (S.) Cherni (change in existing course—eff. fall 14)

167. Biomedical Fluid Mechanics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 106 (may be taken concurrently) or Engineering 103. Basic biofluid mechanics, Navier Stokes equations of motion, circulation, respiration and specialized applications including microcirculation topics such as boundary layer flow. Not open for credit to students who have completed Mechanical Engineering 167C. Offered irregularly. GE credit: SciEng | QL, SE — (S.) Simon (change in existing course—eff. fall 14)

189A. Topics in Biomedical Engineering: Cellular and Molecular Engineering (1-5)
Prerequisite: consent of instructor. Topics in Biomedical Engineering: Cellular and Molecular Engineering. May be repeated if topic differs. Offered irregularly. GE credit: SciEng | SE — (change in existing course—eff. summer 15)

189B. Topics in Biomedical Engineering: Biomedical Imaging (1-5)
Prerequisite: consent of instructor. Topics in Biomedical Engineering: Biomedical Imaging. May be repeated if topic differs. Offered irregularly. GE credit: SciEng | SE — (change in existing course—eff. summer 15)

190A. Upper Division Seminar in Biomedical Engineering (1)
Seminar—1 hour. Restricted to upper division standing. In depth examination of research topics in a small group setting. Question and answer session with faculty members. May be repeated for credit. (F/NP grading only.) GE credit: SE — (change in existing course—eff. fall 14)

Graduate

202. Cell and Molecular Biology for Engineers (4)
Lecture/discussion—4 hours. Prerequisite: Biological Sciences 104 or Molecular and Cellular Biology 121. Preparation for research and critical review in the field of cell and molecular biology for biomedical or applied science engineers. Emphasis on bio-physical and engineering concepts intrinsic to specific topics including receptor-ligand dynamics in cell signaling and function, cell motility, DNA replication and RNA processing, cellular energetics and protein sorting. Modern topics in bioinformatics and proteomics. — (W.) Yamada (change in existing course—eff. summer 15)

204. Physiology for Bioengineers (5)
Lecture—4 hours. Prerequisite: Biological Sciences 1A or equivalent; graduate standing or consent of instructor. Basic human physiology of the nervous, muscular, cardiovascular, respiratory, and renal systems and their interactions; Emphasis on the physical and engineering principles governing these systems, including control and transport processes, fluid dynamics, and electrochemistry. — (F.) Benham (change in existing course—eff. summer 15)

209. Scientific Integrity for Biomedical Engineers (2)
Lecture—1 hour; discussion—1 hour. Open to Biomedical Engineering majors only. Scientific integrity and ethics for biomedical engineers, with emphasis and discussion on mentoring and guidance. Approval by peer review, use of humans and animals in biomedical research, conflict of interest, intellectual property, genetic technology and scientific record keeping. (S/U grading only) — (S.) Simon (change in existing course—eff. fall 14)

210. Introduction to Biomaterials (4)
Lecture—4 hours. Prerequisite: Engineering 45 or consent of instructor. Mechanical and atomic properties of metallic, ceramic, and polymeric implant materials of metallic, ceramic, and polymeric implant materials; corrosion, degradation, and failure of implants; inflammation, wound and fracture healing, blood coagulation; properties of bones, joints, and blood vessels; biocompatibility of orthopedic and cardiovascular materials. — (W.) Fyhrie (change in existing course—eff. summer 15)

211. Design of Polymeric Biomaterials and Biomedical Interfaces (4)
Lecture—4 hours. Prerequisite: Engineering 45 or consent of instructor. Open to upper division undergraduates or graduate students. Design, selection and application of polymeric biomaterials. Integrates...
the performance of human observers viewing those images. Definition of ideal observer and other mathemat-ical procedures that may be used to predict per-formance from system design features. Offered in alternate years.—S. Qi (change in existing course—eff. summer 15)

252. Computational Methods in Biomedical Imaging (4)
Lecture—4 hours. Prerequisite: course 105 or Statis-tics 120; course 108 or Electrical and Computer Engineer-ing 150A. Analytic tomographic reconstruc-tion from projections in 2D and 3D; model-based image reconstruction methods; maximum likelihood and Bayesian methods; applications to CT, PET, and SPECT. Offered in alternate years. (Same course as Electrical and Computer Engineering 205.)—W. Qi (change in existing course—eff. summer 15)

255. Biophotonics in Medicine and the Life Sciences (3)
Lecture/discussion—3 hours. Prerequisite: Physics 108 and Biology 101-105; course 202 highly recom-mended; graduate standing. Introduction to the science and technology of biomedical optics and photonics, with an overview of applications in medi-cine and the life sciences. Emphasis on research sup-ported by the NSF Center for Biophotonics at UC Davis Medical Center. Offered in alternate years. (Same course as Applied Science 255 and Biophys-ics 255.)—S. (S.) Chuang (change in existing course—eff. summer 15)

270. Biochemical Systems Theory (4)
Lecture—4 hours. Prerequisite: course 202 concur-rently or consent of instructor. Systems biology at the biochemical level. Mathematical and computational methods emphasizing nonlinear representation, dynamics, robustness, and optimization. Case stud-ies of signal-transduction cascades, metabolic net-works and regulatory mechanisms. Focus on formulating and answering fundamental questions concerning network function, design, and evolu-tion.—F. Savageau (change in existing course—eff. summer 15)

273. Integrative Tissue Engineering and Technologies (4)
Lecture/discussion—4 hours. Prerequisite: courses 202 and 204 or similar; strongly encourage comple-ment of course 272 although not a prerequisite. Restriction: Engineering princi-ples to direct cell and tissue behavior and formation. Contents include controlled delivery of macromole-cules, transport issues around biomaterials, examination of mechanical forces of engineered constructs, and current experimental techniques used in the field.—F. (F.) Leach (change in existing course—eff. summer 15)

281. Acquisition and Analysis of Biomedical Signals (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: Engineering 100; Statistics 130A. Restricted to upper division engineering. Basic concepts of digital signal recording and analysis; sampling; empirical modeling; Fourier analysis, random processes, spec-tral analysis, and correlation applied to biomedical signals. —S. (S.) Srinivasan (change in existing course—eff. summer 15)

284. Mathematical Methods for Biomedical Engineers (4)
Lecture/discussion—4 hours. Prerequisite: Mathe-matics 22B, Statistics 130A, or consent of instructor; upper division biomedical engineering majors, and graduate students in sciences and engineering; pri-ority given to Biomedical Engineering graduate stu-dents. Theoretical applications of linear systems, ordinary and partial differential equations, and probability theory and random processes that describe biological systems and instruments that measure them. Students will be introduced to numeri-cal solution techniques in MATLAB.—W. (W.) Duan (change in existing course—eff. summer 15)

285. Computational Modeling in Biology and Immunology (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Essential computa-tional modeling techniques in biology and immunol-ogy. Emphasis on applications of Monte Carlo methods in studying immune recognition and response. Introduction to Brownian dynamics and Molecular dynamics simulations as applied in molecu-lar level diffusion and interactions.—S. (change in existing course—eff. summer 15)

286. Nuclear Imaging in Medicine and Biology (4)
Lecture/discussion—4 hours. Prerequisite: course 243 or consent of instructor. Radioactive decay, interaction of radiation with matter, radionuclide production, radiation detection, digital autoradiogra-phy, gamma camera imaging, single photon emis-sion computed tomography, positron emission tomogra phy and applications of these techniques in biology and medicine. Offered in alternate years.—S. Cherry (change in existing course—eff. summer 15)

287. Concepts in Molecular Imaging (4)
Lecture—2 hours, lecture/discussion—2 hours, term paper. Prerequisite: Chemistry 2C, Mathematics 21C, Physics 9D, consent of instructor. Current tech-niques and tools for molecular imaging. Emphasis on learning to apply principles from the physical sci-ences to imaging problems in medicine and biol-ogy.—S. Stults (change in existing course—eff. summer 15)

289A. Selected Topics in Biomedical Engineering: Cellular and Molecular Systems Engineering (1-5)
Variable. Prerequisite: consent of instructor. Selected topics in Cellular and Molecular Systems Engineer-ing. May be repeated for credit when topic dif-fers.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

289B. Selected Topics in Biomedical Engineering: Biomedical Imaging (1-5)
Variable. Prerequisite: consent of instructor. Selected topics in Biomedical Imaging. May be repeated for credit when topic differs.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

289C. Selected Topics in Biomedical Engineering: Computational Bioengineering (1-5)
Variable. Prerequisite: consent of instructor. Selected topics in Computational Bioengineering. May be repeated for credit when topic differs.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

289D. Selected Topics in Biomedical Engineering: Cell and Tissue Biomechanics (1-5)
Variable. Prerequisite: consent of instructor. Selected topics in Cell and Tissue Biomechanics. May be repeated for credit when topic differs.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

289E. Selected Topics in Biomedical Engineering: Analysis of Human Movement (1-5)
Variable. Prerequisite: consent of instructor. Selected topics in Analysis of Human Movement. May be repeated for credit when topic differs.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

Professional
396. Teaching Assistant Training Practicum (1-4)
Prerequisite: graduate standing. May be repeated for credit. (S/U grading only)—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

Engineering: Chemical

New and changed courses in
Engineering: Chemical (ECH)

Lower Division
98. Directed Group Study (1-5)
Prerequisite: consent of instructor and lower division standing. (P/NP grading only) Offered irregularly. GE credit: SE.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

99. Special Study for Undergraduates (1-5)
Prerequisite: consent of instructor. (P/NP grading only) Offered irregularly. GE credit: SE.—F, W, S, (F, W, S.) (change in existing course—eff. summer 15)

Upper Division
140. Mathematical Methods in Biochemical and Chemical Engineering (4)
Lecture/discussion—3 hours; laboratory—1 hour. Prerequisite: Mathematics 22B; and Chemical and Materials Science 6 or Engineering 6 or equivalent. Mathematical methods for solving problems in chem-ical and biochemical engineering, with emphasis on transport phenomena. Fourier series and separation of variables. Sturm-Liouville eigenvalue problems. Similarity transformations. Tensor analysis. Finite dif-ference methods for solving time-dependent diffusion problems. Not open for credit to students who have completed course 159. GE credit: SciEng | SE.—F (change in existing course—eff. fall 15)

144. Rheology and Polymer Processing (3)
Lecture/Discussion—3 hours. Prerequisite: Course 141. Deformation in steady shear, unsteady shear, and elongational flows. Linear and non-linear visco-elastic constitutive models. The principle of material indifference and admisibility of constitutive equa-tions. Introduction to the unit operations of polymer processing. Not open for credit to students who have completed course 150C. Offered irregularly. GE credit: SciEng | SE.—S. (S.) (change in existing course—eff. summer 15)

145A. Chemical Engineering Thermodynamics Laboratory (3)
Laboratory—2 hours; discussion—1 hour; extensive writing. Prerequisite: course 152A, course 152B (may be taken concurrently). Open to majors in Chemical Engineering, Chemical Engineering/Mate-rials Science, & Biochemical Engineering. Labora-tory experiments in chemical engineering thermodynamics. GE credit: SciEng | SE, WE.—W. (W.) (change in existing course—eff. fall 15)

145B. Chemical Engineering Transport Lab (3)
Laboratory—2 hours; discussion—1 hour; extensive writing. Prerequisite: courses 141 and 145A. Open to majors in Chemical Engineering, Chemical Engi-neering/Materials Science, & Biochemical Engineer-ing. Laboratory experiments in chemical engineering transport phenomena. GE credit: SciEng | SE, WE.—S. (S.) (change in existing course—eff. fall 15)
160. Fundamentals of Biomanufacturing (3)
Lecture—3 hours. Prerequisite: Microbiology 102, Biological Science 102 or Animal Biology 102.
Principles of large scale bioreactor production of metabolites, enzymes, and recombinant proteins including the development of strains/cell lines, fermentation/bioreactor design, monitoring and operation, product recovery and purification, and biomanufacturing economics. Not open for credit to students who have completed course 161C or both 161A and 161B; only two units of credit to students who have completed either course 161A or 161B. Offered irregularly. GE credit: SciEng | QC, SE, VL.
(Change in existing course—eff. summer 15)

161C. Biotechnology Facility Design and Regulatory Compliance (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 161A (corequisite) and course 161B (corequisite), or Molecular & Cellular Biology 262 (corequisite). Design of biotechnology manufacturing facilities. Fermentation and purification equipment, and utility systems. Introduction to current manufacturing practices, regulatory compliance, and documentation. GE credit: SciEng or SocSci | QC, SE or SS, SL, VL—W. (W.)
(Change in existing course—eff. summer 15)

161L. Bioprocess Engineering Laboratory (4)
Laboratory—9 hours; discussion—1 hour; term paper. Prerequisite: course 161A and 161B, or Viti- culture and Enology 186, or Biological Sciences 103 and Molecular and Cellular Biology 120L. Pass One restricted to chemical/biochemical engineering majors. Laboratory experiments in the operation and analysis of bioreactors; determination of oxygen mass transfer coefficients in bioreactors and ion exchange chromatography. GE credit: SciEng, Writ | QC, SE, VL, WE—S.
(Change in existing course—eff. winter 15)

166. Catalysis (3)
Lecture—3 hours. Prerequisite: course 148A; consent of instructor. Principles of catalysis based on an integration of principles of physical, organic, and inorganic chemistry and chemical kinetics and chemical engineering. Catalysis in solution and catalysis by enzymes; catalysis in swellable polymers; catalysis in microscopic cages (zeolites); catalysis on surfaces. Offered irregularly. GE credit: SciEng | QC, SE—W. (W.)
(Change in existing course—eff. summer 15)

170. Introduction to Colloid and Surface Phenomena (3)
Lecture—3 hours. Prerequisite: Chemistry 110A. Introduction to the behavior of surfaces and disperse systems. The fundamentals will be applied to the solution of practical problems in colloid science. The course should be of value to engineers, chemists, biologists, soil scientists, and related disciplines. Offered irregularly. GE credit: SciEng | QC, SE—S. (S.)
(Change in existing course—eff. summer 15)

190X. Upper Division Seminar (1)
Seminar—1 hour. Prerequisite: upper division standing. In-depth examination of a special topic in a small group setting. Offered irregularly.
(Change in existing course—eff. summer 15)

192. Internship in Chemical or Biochemical Engineering (1-5)
Internship—3 to 15 hours. Prerequisite: completion of a minimum of 84 units; project approval before period of internship; consent of instructor. Supervised work experience in Chemical or Biomedical Engineering. May be repeated for credit when project differs. Offered irregularly. (P/NP grading only) GE credit: SE—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

198. Group Study (1-5)
Prerequisite: consent of instructor. Offered irregularly. (P/NP grading only) GE credit: SE—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

206. Biochemical Engineering (3)
Lecture—3 hours. Prerequisite: Microbiology 102 and 102L, Biological Sciences 101, 102, 103, Molecular and Cellular Biology 120L, 200A; Food Science and Technology 205 recommended; or consent of instructor. Interaction of chemical engineering, biochemical, and microbiology. Mathematical representations of microbial systems. Kinetics of growth, death, and metabolism. Continuous fermentation, aeration, mass transfer, and scale-up in fermentation systems, product recovery, enzyme technology. Offered irregularly.—W. (W.)
(Change in existing course—eff. summer 15)

226. Enzyme Engineering (3)
Lecture—3 hours. Prerequisite: Microbiology 102 and 102L, Biological Sciences 102, 103, Molecular and Cellular Biology 120L, 200A; consent of instructor. Application of basic biochemical and engineering principles of practical enzymatic processes. Lectures cover large scale production and separation of enzymes, immobilized enzyme systems, enzyme reactor design and optimization, and new application of enzymes in genetic engineering related biotechnology. Offered irregularly.—W. (W.)
(Change in existing course—eff. summer 15)

245. Micro- and Nano-Technology in Life Sciences (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Survey of biomedi- cal device design from the engineering and biological perspectives; micro- and nano-fabrication and characterization techniques; surface chemistry and mass transfer; essential modeling tools and models; proposal development skills to merge afore- mentioned themes in a multidisciplinary project. (Same course as Computer and Computer Engineer- ing 245 and Materials Science and Engineering 245.)—S. (S.) Seker
(new course—eff. winter 16)

246. Advanced Biochemical Engineering (2)
Lecture—2 hours. Prerequisite: course 206 or consent of instructor. Advances in the field of biotechnol- ogy including genetic engineering, enzyme engineering, biocatalysis, and renewable resources development. The important results of orig- inal research will be evaluated for understanding of the fundamental principles and for potential practi- cal application. Offered irregularly.—W. (W.)
(Change in existing course—eff. summer 15)

254. Colloid and Surface Phenomena (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: graduate standing in science or engineering or consent of instructor. Thermodynamics and rate pro- cesses at interfaces. These fundamental processes will be applied to determine the collective properties of thin films and membranes, self-assembled systems, liquid crystals and colloidal systems. Experimental techniques in surface analysis.—S. (S.)
(Change in existing course—eff. summer 15)

262. Transport Phenomena in Multiphase Systems (3)
Lecture/discussion—3 hours. Prerequisite: course 253C. Heat, mass and momentum transfer in multi- phase, multiphase components with special empha- sis on transport processes in porous media. Derivation of the equations, numerical and application of the method of volume averaging to multicompo- nent, reacting systems. Offered irregularly.—S. (S.)
(Change in existing course—eff. summer 15)

263. Rheology and Mechanics of Non-Newtonian Fluids (3)
Lecture—3 hours. Prerequisite: courses 253A and 259 or consent of instructor. Mechanics of polymer solutions and suspension, especially the develop- ment of properly invariant constitutive equations. Topics include: viscoelasticity, continuum mechanics, kinetic theory. Offered irregularly.—W. Powell
(Change in existing course—eff. summer 15)

265. Emulsions, Microemulsions and Bilayers (3)
Lecture—3 hours. Prerequisite: an undergraduate course in physical chemistry. Thermodynamics and mechanical descriptions of surfactant-laden inter- faces. Forces between and within interfaces. Physics of micelle and microemulsion formation. Structure and stability of emulsions. Properties of phospholipid bilayers, with emphasis on vesicles.—W. (W.)
(Change in existing course—eff. summer 15)

267. Advanced Process Control (3)
Lecture—3 hours. Prerequisite: course 157 or the equivalent. Advanced course in analysis and synthesis of linear multivariable systems. Emphasis on fre- quency domain techniques and applicationsler to chemical processes. Topics include singular value analysis, internal model control, robust controller design methods as well as self-tuning control tech- niques. Offered irregularly.—S.
(Change in existing course—eff. summer 15)

289A. Special Topics in Chemical Engineering: Fluid Mechanics (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Fluid Mechanics. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

289B. Special Topics in Chemical Engineering: Nonlinear Analysis and Numerical Methods (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Nonlinear Analysis and Numerical Methods. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

289C. Special Topics in Chemical Engineering: Process Control (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Process Control. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

289D. Special Topics in Chemical Engineering: Chemistry of Catalytic Processes (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Chemistry of Catalytic Processes. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

289E. Special Topics in Chemical Engineering: Biotechnology (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Biotechnology. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)

289F. Special Topics in Chemical Engineering: Interfacial Engineering (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics in Interfacial Engineering. May be repeated for credit when topic differs. Offered irregularly.—F, W, S. (F, W, S.)
(Change in existing course—eff. summer 15)
Engineering: Chemical and Materials Science

New and changed courses in Engineering: Chemical and Materials Science (ECM)

Lower Division
1. Design of Coffee-An Introduction to Chemical Engineering (3)
   Lecture—1 hour; laboratory—2 hours; project—1 hour. Non-mathematical introduction to how chemical engineers think, illustrated by elucidation of the process of roasting and brewing coffee. Qualitative overview of the basic principles of engineering analysis and design. Corresponding experiments testing design choices of coffee. Not open for credit to Chemical Engineering and Biochemical Engineering majors or students who have completed Chemical and Materials Science S. GE credit: SciEng | SE, SI, VI. —F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

6. Computational Methods for Bio/Chemical/Materials Engineers (4)
   Lecture/discussion—4 hours. Prerequisite: Mathematics 21C. Programming methods for solving problems in chemical, biochemical and materials engineering using MATLAB. Programming styles, data structures, working with lists, functions and rules. Applications drawn from material balances, statistics, numerical methods, and bioinformatics. GE credit: SciEng | QL, SE, S. —F. (F.) (change in existing course—eff. fall 15)

90X. Honors Discussion Section (1)
   Discussion—1 hour. Prerequisite: open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors programs. Examination of special topics covered in selected lower-division courses through additional readings, discussions, collaborative work, or special activities which may include projects, laboratory experience or computer simulations. May be repeated for credit when topic differs. Offered irregularly—II, III. —F. (F.) (change in existing course—eff. summer 15)

94H. Honors Seminar (1)
   Seminar—1 hour. Prerequisite: open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors programs. Examination of selected current topics in chemical or biochemical engineering through readings, discussions, collaborative work or special activities which may include projects, laboratory experiences or computer simulations. Offered irregularly—F. —F. (F.) (change in existing course—eff. summer 15)

Upper Division
189A. Special Topics in ECM: Fluid Mechanics (1-5)
   Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Fluid Mechanics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE—F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

189B. Special Topics in ECM: Nonlinear Analysis and Numerical Methods (1-5)
   Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Nonlinear Analysis and Numerical Methods. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE—F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Pre-Fall 2011 General Education (GE): Arts/Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div—Domestic Diversity; Wrt—Writing Experience
Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SE—Science and Engineering; SS—Social Sciences;
ACGH—American Cultures; DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience
Quarter Offered: F-Winter, S-Spring, Su-Summer; 2015-2016 offering in parentheses
189L. Special Topics in ECM; Electronic Materials (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Electronic Materials. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189M. Special Topics in ECM; Ceramics and Minerals (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Ceramics and Minerals. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189N. Special Topics in ECM; Physics and Chemistry of Materials (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Physics and Chemistry of Materials. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189P. Special Topics in ECM; Materials Processing (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Materials Processing. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189Q. Special Topics in ECM; Biomaterials (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Biomaterials. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

190. Special Topics in ECM; Surface Chemistry of Metal Oxides (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Surface Chemistry of Metal Oxides. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189R. Special Topics in ECM; Electronic Materials (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Electronic Materials. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

189T. Special Topics in ECM; Biomaterials (1-5)
Lecture and/or laboratory. Prerequisite: consent of instructor. Special topics; Biomaterials. May be repeated for credit when topics differ. Offered irregularly. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

190X. Honors Discussion Section (1)
Discussion—1 hour. Prerequisite: open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors program. Examination of special topics covered in selected upper division courses through additional readings, discussions, collaborative work, or special activities which may include projects, laboratory experiences or computer simulations. May be repeated for credit when topics differ. —F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

194HA. Special Study for Honors Students (2)
Independent study—6 hours. Open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors programs. Guided independent study of a selected topic in Chemical Engineering or Biochemical Engineering. Preparation for course 194HB. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

194HB. Special Study for Honors Students (1-5)
Independent study—3 hours. Prerequisite: course 194HA. Open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors programs. Guided independent study of a selected topic in Chemical Engineering or Biochemical Engineering. Preparation for course 194HC. May be repeated for credit. GE credit: SciEng | SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

194HC. Special Study for Honors Students (1-5)
Prerequisite: course 194HB. Open only to students enrolled in the Chemical Engineering or Biochemical Engineering Honors programs. Guided independent study of a selected topic in Chemical Engineering or Biochemical Engineering leading to the presentation of an honors project or thesis, under the supervision of a faculty adviser. GE credit: SciEng | QL, SE — F, W, S. (F, W, S.)
[change in existing course — eff. summer 15]

Graduate

229. Computational Molecular Modeling (4)
Lecture—3 hours; project—1 hour. Prerequisite: familiar with basic programming in either Fortran or C; prior experience with numerical methods and analysis; consent of instructor. Theory and hands-on implementation of algorithms in computational statistical mechanics. Temporal integrators, molecular dynamics, ab-initio methods, force fields, constrained dynamics, Monte Carlo techniques, fluctuation-dissipation theorem, and parallel vs. serial computing. Offered in alternate years.—W. Faller
[change in existing course — eff. summer 15]

261. Molecular Modelling of Soft and Biological Materials (4)
Lecture/discussion—4 hours. Prerequisite: Materials Science and Engineering 247 or Engineering: Chemical 252 or equivalent course in advanced thermodynamics or numerical statistics. Modern molecular simulation techniques with a focus on soft matter like polymers, biologically relevant systems, and glasses. Offered in alternate years.—W. Faller
[change in existing course — eff. summer 15]

265. Process Monitoring and Data Analysis (3)
Lecture—2 hours. Prerequisite: senior or graduate standing. Theory behind and description of modern methods for monitoring in engineering and physical sciences. Not open for credit to upper division students. GE credit: SciEng | SE.
[change in existing course — eff. summer 15]

280. Seminar in Ethics for Scientists (2)
Seminar—2 hours. Restricted to 20 students; graduate standing in any department of science or engineering. Studies of topical and historical issues in the ethics of science, possibly including issues such as proper authorship, peer review, fraud, plagiarism, responsible collaboration, and conflict of interest. Limited enrollment (15 students) as course as Chemistry 280 and Physics 280.) [S/J grading only] —S. (S.)
[change in existing course — eff. summer 15]

281. Green Engineering: Theory and Practice (3)
Lecture/discussion—3 hours. Prerequisite: graduate standing in Engineering or consent of instructor. Methods of evaluating alternative technologies, processes, materials, chemicals, and/or products relative to pollution, waste, toxic substance use, and sustainability. Topics include environmental regulations, recycling, life-cycle assessment, economic analysis, design for the environment, green chemistry and toxicology. Offered in alternate years.—W. Schmung
[change in existing course — eff. summer 15]

Engineering: Civil and Environmental

New and changed courses in Engineering: Civil and Environmental (ECI)

Lower Division

3. Civil Infrastructure and Society (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: Mathematics 21A (may be taken concurrently). Pass One restricted to lower division students; Civil Engineering majors. Introduction to civil infrastructure and its relationship with society and the natural environment. Exposure to innovative research on civil engineering and environmental systems. Participation in laboratory experiments illustrative of the solution of representative but simplified engineering problems. Not open for credit to upper division students. GE credit: SciEng or SocSci | QL, SE or SS — F. (F.) Darby
[change in existing course — eff. winter 16]

17. Surveying (2)
Lecture—2 hours. Prerequisite: Physics 9A (may be taken concurrently). Restricted to Civil Engineering and Biological Systems Engineering majors; non-majors accommodated on a space-available basis. Theory behind and description of modern methods of land surveying in Civil Engineering. GE credit: SciEng | SE.
[change in existing course — eff. fall 14]

19. C Programming for Civil and Environmental Engineers (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: Mathematics 21A (may be taken concurrently). Pass One open to Civil Engineering majors and Optical Science and Engineering majors. Computational problem solving techniques for Civil and Environmental Engineering applications using structured C programming. Algorithm design applied to realistic problems. GE credit: SciEng | SE — Jeremic, Klemman
[change in existing course — eff. fall 14]

Upper Division

150. Air Pollution Control System Design: Senior Design Experience (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: C or better in Atmospheric Science 149 or course 149. Restricted to senior level standing. Design and evaluation of air pollution control devices and systems. GE credit: SciEng | SE — W. (W.) Cappa
[change in existing course — eff. spring 16]

161. Transportation System Operations (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: C or better in both Mathematics 21C and Physics 9A. Principles of transportation system operations; traffic characteristics and methods of measurement; models of transportation operations and congestion applied to urban streets and freeways. GE credit: SciEng | QL, SE — F. (F.) Zhang
[change in existing course — eff. spring 16]

162. Transportation Land Use Sustainable Design: Senior Design Experience (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: C or better in course 148A or 161 or 163. Restricted to senior level standing. Interactions between land use and transportation systems design. Generalized design paradigm; project-based solu-
tions for transportation land use. Students will select from various strategies to satisfy multiple cost constraints including funding, effectiveness and environmental sustainability. Oral, poster and written presentations required. GE credit: SciEng | SE, SL.—S, S. (S.) Neimeier

(change in existing course.—eff. spring 16)

175. Geotechnical Earthquake Engineering (4)
Lecture—4 hours. Prerequisite: C or better in course 171. Earthquakes, faults, seismology and ground motions; complex notation for vibratory motions, the wave equation, reflection and refraction; dynamic soil properties, linear and nonlinear 1D site response analysis; introduction to soil-structure interaction. Not open for credit to students who have taken course 287A. GE credit: SciEng | SE.—W, [W] Boulangere

(change in existing course.—eff. winter 16)

189A. Selected Topics in Civil Engineering: Environmental Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Environmental Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189B. Selected Topics in Civil Engineering: Hydraulics and Hydrologic Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Hydraulics and Hydrologic Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189C. Selected Topics in Civil Engineering: Engineering Planning (1-5)
Prerequisite: consent of instructor. Directed group study in Engineering Planning. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189D. Selected Topics in Civil Engineering: Geotechnical Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Geotechnical Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189E. Selected Topics in Civil Engineering: Structural Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Structural Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189F. Selected Topics in Civil Engineering: Transportation (1-5)
Prerequisite: consent of instructor. Directed group study in Transportation Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189H. Selected Topics in Civil Engineering: Transportation Planning (1-5)
Prerequisite: consent of instructor. Directed group study in Transportation Planning. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189I. Selected Topics in Civil Engineering: Water Resources Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Water Resources Engineering. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

189J. Selected Topics in Civil Engineering: Water Resources Planning (1-5)
Prerequisite: consent of instructor. Directed group study in Water Resources Planning. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

Graduate

237. Bridge Design (4)
Lecture—4 hours. Prerequisite: courses 130, 135; course 234 recommended. Open to graduate students only. Bridge types, behavior and construction characteristics; design philosophy, details according to Caltrans and American Association of State Highway and Transportation Officials codes, principles; seismic design and retrofit of concrete bridges; modern bridge designs using advanced fiber reinforced polymer composites; fieldtrip required. —S. (S.) Cheng

(change in existing course.—eff. fall 14)

265. Stochastic Hydrology and Hydraulics (4)
Lecture—4 hours. Prerequisite: course 266 or consent of instructor. Physics-based stochastic methods in modeling hydrologic and hydraulic processes; theory for modeling hydrologic-hydraulic governing equations as stochastic partial differential equations applied to various hydrologic-hydraulic processes under uncertainty, including transport, open channel flow, overland flow, soil water flow, and groundwater. Offered in alternate years. —F, [F] Kovacs

(change in existing course.—eff. winter 15)

289A. Selected Topics in Civil Engineering: Environmental Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Environmental Engineering. May be repeated for credit. —F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289B. Selected Topics in Civil Engineering: Hydraulics and Hydrologic Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Hydraulics and Hydrologic Engineering. May be repeated for credit. —F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289C. Selected Topics in Civil Engineering: Structural Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Structural Engineering. May be repeated for credit. —F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289D. Selected Topics in Civil Engineering: Geotechnical Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Geotechnical Engineering. May be repeated for credit. —F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289E. Selected Topics in Civil Engineering: Structural Mechanics (1-5)
Prerequisite: consent of instructor. Directed group study in Structural Mechanics. May be repeated for credit.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289F. Selected Topics in Civil Engineering: Transportation Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Transportation Engineering. May be repeated for credit.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289G. Selected Topics in Civil Engineering: Transportation Planning (1-5)
Prerequisite: consent of instructor. Directed group study in Transportation Planning. May be repeated for credit.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289H. Selected Topics in Civil Engineering: Water Resources Engineering (1-5)
Prerequisite: consent of instructor. Directed group study in Water Resources Engineering. May be repeated for credit.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

289J. Selected Topics in Civil Engineering: Water Resources Planning (1-5)
Prerequisite: consent of instructor. Directed group study in Water Resources Planning. May be repeated for credit when the topic is different. GE credit: SciEng | SE.—F, W, S. (F, W, S) (change in existing course.—eff. summer 15)

New and changed courses in Engineering: Computer Science (ECS)

Lower Division

10. Introduction to Programming (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: two years of high school algebra. A hands-on introduction to computation, through programming and problem solving. Two units of credit for students who have taken course 12 or ECS 15; not open to students who have completed course 30. GE credit: SciEng | QL, SE, SL.—F, W, S. (F, W, S) Amenta, Gertz, Ludaescher

(change in existing course.—eff. fall 07)

12. Introduction to Media Computation (4)
Lecture—3 hours; discussion/lab—1 hour. Introduction to key computational ideas necessary to understand and produce digital media. Fundamentals of programming are covered as well as analysis of how media are represented and transmitted in digital form. Aimed primarily at non-computer science students. Two units of credit for students that have taken course 10 or course 30 or Engineering 6. (Same course as Cinema and Technocultural Stud. 012.) GE credit: ArtHum or SciEng | AH or SE, VL.—W, [W] Neff

(change in existing course.—eff. spring 15)
89A. Special Topics in Computer Science; Computer Science Theory (1-5)
Lecture; laboratory. Prerequisite: consent of instructor. Special topics in Computer Science Theory. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89B. Special Topics in Computer Science; Architecture (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Architecture. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89C. Special Topics in Computer Science; Programming Languages and Compilers (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Programming Languages and Compilers. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89D. Special Topics in Computer Science; Operating Systems (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Operating Systems. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89E. Special Topics in Computer Science; Software Engineering (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Software Engineering. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89F. Special Topics in Computer Science; Databases (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Databases. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89G. Special Topics in Computer Science; Artificial Intelligence (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Artificial Intelligence. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89H. Special Topics in Computer Science; Computer Graphics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Computer Graphics. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89I. Special Topics in Computer Science; Computer-Aided Design (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Computer-Aided Design. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89J. Special Topics in Computer Science; Scientific Computing (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Scientific Computing. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

89K. Special Topics in Computer Science; Scientific Computing (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Scientific Computing. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S, (F, W, S) (change in existing course—eff. summer 15)

Upper Division

124. Theory and Practice of Bioinformatics (4)
Lecture — 3 hours; laboratory — 1 hour. Prerequisite: course 20 or Mathematics 108. Introduction to the theory and practice of biological techniques used in computer security. Encryption (secretkey and public-key), message authentication, digital signatures, entity authentication, key distribution, and other cryptographic protocols. The social context of cryptography. GE credit: SciEng | QL, SE, SL — Franklin, Rogaway (change in existing course—eff. winter 16)

129. Computational Structural Bioinformatics (4)
Lecture — 3 hours; discussion — 1 hour. Prerequisite: course 20 or Mathematics 108. Introduction to the theory and practice of computational techniques used in computer security. Encryption (secretkey and public-key), message authentication, digital signatures, entity authentication, key distribution, and other cryptographic protocols. The social context of cryptography. GE credit: SciEng | QL, SE, SL — Franklin, Rogaway (change in existing course—eff. winter 16)

150. Operating Systems and System Programming (4)
Lecture — 3 hours; discussion — 1 hour. Prerequisite: course 20 or Electrical and Computer Engineering 170. Basic concepts of operating systems and system programming. Processes and interprocess communication/synchronization; virtual memory, program loading and linking; file and I/O subsystems; utility programs. Study of a real operating system. GE credit: SciEng | SE — F, W, S, (F, W, S) Levitt, Maffol, Olsson, Wu (change in existing course—eff. fall 14)

170. Introduction to Artificial Intelligence (4)
Lecture — 3 hours; discussion — 1 hour. Prerequisite: course 60. Design and implementation of intelligent computer systems. Knowledge representation and organization. Memory and inference. Problem solving. Natural language processing. GE credit: SciEng | SE — W (W) Davidson, Levitt (change in existing course—eff. spring 15)
189K. Special Topics in Computer Science; Scientific Computing (1-5)
Lecture; laboratory; lab. Prerequisite: consent of instructor. Special topic in Scientific Computing. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S (F, W, S) (change in existing course—eff. summer 15)

189L. Special Topics in Computer Science; Computer Science (1-5)
Lecture; laboratory; lab. Prerequisite: consent of instructor. Special topic in Computer Science. May be repeated for credit when topic differs. GE credit: SciEng | SE — F, W, S (F, W, S) (change in existing course—eff. summer 15)

189M. Special Topics in Computer Science; Computer Security (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer Security. May be repeated for credit when topic differs. Offered irregularly. (change in existing course—eff. summer 15)

189N. Special Topics in Computer Science; Bioinformatics and Computational Biology (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Bioinformatics and Computational Biology. May be repeated for credit when topic differs. Offered irregularly. (change in existing course—eff. summer 15)

Graduate

201A. Advanced Computer Architecture (4)
Lecture—3 hours; term paper. Prerequisite: course 154B or Electrical and Computer Engineering 170; course 150. Pass One and Pass Two open to Graduate Students in Computer Science only. Modern research topics and methods in computer architecture. Design implications of memory latency and bandwidth limitations. Performance enhancement via within-processor and between-processor parallelism. Term project involving student-proposed extensions or modifications of work in the research literature. Open for credit to students who have completed course 250A. — F (F) (change in existing course—eff. winter 16)

2018. High-Performance Uniprocessing (4)
Lecture—3 hours; term paper. Prerequisite: course 201A. Pass One and Pass Two open to Graduate Students in Computer Science only. Maximizing uniprocessor performance. Philosophy of performance solutions to the problems; historical and current processor design. Not open for credit to students who have completed course 250B. — W (W) (change in existing course—eff. spring 16)

203. Novel Computing Technologies (4)
Lecture—3 hours; project—1 hour. Prerequisite: course 201A. Pass One and Pass Two open to Graduate Students in Computer Science only. Novel computing technologies that could revolutionize computer architecture. Quantum computing technologies, including algorithms, devices, and fault tolerance. A survey of other unconventional technologies including nanoscale electronics, MEMS devices, biological devices, and nanotechnology. Offered in alternate years. — W (W) (change in existing course—eff. spring 16)

220. Theory of Computation (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 120, 122A. Pass One and Pass Two open to Graduate Students in Computer Science only. Time and space complexity classes. Reductions, completeness, and the role of randomness. Logic and undecidability. — S (S) (Rogaway) (change in existing course—eff. fall 15)

221. Computational Methods in Systems and Synthetic Biology (4)
Lecture—4 hours. Pass One and Pass Two open to Graduate Students in Computer Science only. Computational methods related to systems and synthetic biology. An overview of machine learning techniques related to the analysis of biological data, biological networks. Predictive modeling and simulation of biological systems. Topics on biological circuit construction. — F (F) Tagkopoulos (change in existing course—eff. spring 16)

222A. Design and Analysis of Algorithms (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 122A, Statistics 31A recommended. Pass One and Pass Two open to Graduate Students in Computer Science only. Techniques for designing efficient algorithms, analyzing their complexity and applying these algorithms to a broad range of applications. Methods for recognizing and dealing with difficult problems. — F (F) Amenta, Franklin, Gusfield, Hartvig, Rogaway (change in existing course—eff. spring 16)

222B. Advanced Design and Analysis of Algorithms (4)
Lecture—3 hours; project—1 hour. Prerequisite: course 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Advanced topics in computer science; complexity classification. The classes P, NP, P-space, co-NP. Matching and network flow algorithms. Matrix multiplication. Approximation algorithms. — W (W) Gusfield, Franklin, Hartvig, Rogaway (change in existing course—eff. spring 16)

223. Parallel Algorithms (4)
Lecture/laboratory—3 hours; project—3 hours; project—1 hour. Prerequisite: course 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Models of parallel computer systems including PRAMs, loosely coupled systems and interconnection networks. Parallel algorithms to solve classical problems and general techniques for their design and analysis. Proving lower bounds on parallel computation in several settings. — W (W) Martel (change in existing course—eff. spring 16)

224. String Algorithms and Applications in Computational Biology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Algorithms that operate on strings. Pattern matching, sets of patterns, regular expressions and pattern matching, suffix trees and applications, inexact similarity, parametric sequence alignment, applications to DNA sequencing and protein database searching. Offered in alternate years. — W (W) (change in existing course—eff. spring 16)

225. Graph Theory (3)
Lecture—3 hours. Prerequisite: graduate standing in electrical engineering or computer science or consent of instructor. Pass One and Pass Two open to Graduate Students in Computer Science only. Fundamental concepts. Vector spaces and graphs. Planar graphs. Whitney’s and Kuratowski’s theorems. Topological parameters: packings and coverings. Connectivity: Menger’s theorem. Hamilton graphs: Foss’s and Chvatal’s theorems. Graph coloring. Tait’s theorem. Graph coloring: Brooks and Vizing’s theorems. — W (W) Franklin (change in existing course—eff. spring 16)

226. Computational Geometry (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 175, 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Mathematics of unstructured data. Algorithms for data structures such as Voronoi diagrams, octrees, and arrangements. Applications in computer graphics, concentration on problems in three-dimensions. Offered in alternate years. — S (S) (Amenta, Max) (change in existing course—eff. spring 16)

227. Modern Cryptography (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 220 or 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Modern cryptography as a discipline emphasizing formal definitions and proofs of security. One-way functions, pseudo-randomness, encryption, digital signatures, zero-knowledge, secure protocols. — W (W) Rogaway (change in existing course—eff. spring 16)

228. Cryptography for E-Commerce (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 222A. Pass One and Pass Two open to Graduate Students in Computer Science only. Cryptographic primitives and protocols of importance to e-commerce, present and future, including content distribution. Linear algebra and probability; informationtheory; security protocols in various settings. — W (W) Franklin (change in existing course—eff. spring 16)

230. Applied Numerical Linear Algebra (4)
Lecture/laboratory—3 hours; discussion—1 hour. Prerequisite: course 124. Pass One and Pass Two open to Graduate Students in Computer Science only. Applied Linear Algebra 209 or Mathematics 167. Pass One and Pass Two open to Graduate Students in Computer Science only. Numerical linear algebra (NLA) with emphasis on applications in engineering and science: matrix factorizations; perturbation and rounding error analyses of fundamental NLA algorithms. Offered in alternate years. — F (F) Bai, Labb (change in existing course—eff. spring 16)

231. Large-Scale Scientific Computation (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 130. Pass One and Pass Two open to Graduate Students in Computer Science only. Algorithms and techniques for large-scale scientific computation, including basics for high performance computing, iterative methods, discrete approximation, fast Fourier transform, Poisson and partial differential equations, spectral graph partition and its applications. Offered in alternate years. — W (W) Bai, Labb (change in existing course—eff. spring 16)

234. Computational Functional Genomics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 124; graduate standing in Computer Science or Life Sciences. Pass One and Pass Two open to Graduate Students in Computer Science only. Bioinformatics methods for analysis and inference of functional relationships among genes using microbiome and synthetic genomic data, including methods for integration of gene expression, promoter sequence, TF-DNA binding and other data, and approaches in modeling of biological networks. — W (W) Filkov (change in existing course—eff. spring 16)

236. Computer Security: Intrusion Detection Based Approach (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 150; 153 recommended. Pass One and Pass Two open to Graduate Students in Computer Science only. Concepts of intrusion detection, anomaly detection based on machine learning, signature-based detection using pattern matching, automated response to attacks using artificial intelligence planning, tracing intruders based on principal component analysis, security policy languages. Offered in alternate years. — F (F) Levitt (change in existing course—eff. spring 16)

240. Programming Languages (4)
Lecture—3 hours; discussion—1 hour. Prerequisites: courses 140A; 142. Pass One and Pass Two open to Graduate Students in Computer Science only.

Pre-Fall 2011 General Education (GE): Arts = Arts and Humanities; SciEng = Science and Engineering; SocSci = Social Sciences; Div = Divisional; Wrt = Writing Experience

ACHG = American Cultures; DD = Domestic Diversity; OL = Oral Skills; QL = Quantitative; SL = Scientific; VL = Visual; WC = World Cultures; WE = Writing Experience

Quarter Offered: F = Fall; W = Winter; S = Spring; Su = Summer; 2015-2016 offering in parentheses
Advanced topics in programming languages, including formal syntax and semantics, the relationship between formal semantics and implementation, and an introduction to the lambda calculus. Additional topics will include language design principles, alternative programming languages, in-depth semantic theory and models of language implementation. —W. (W.) Pandey

(change in existing course—eff. spring 16)

242. Translation of Programming Languages (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 240. Pass One and Pass Two open to Graduate Students in Computer Science only. Compilers; optimizations for performance, code size and power reduction. Topics include control- and data-flow analysis, redundancy elimination, loop and cache optimization, register allocation, local and global instruction scheduling, and modulo scheduling. —W. (W.) Wilken

(change in existing course—eff. spring 16)

243. Code Generation and Optimization (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 201A or Engineering Electrical and Computer 270. Pass One and Pass Two open to Graduate Students in Computer Science only. Compiler optimizations for performance, code size and power reduction. Topics include control- and data-flow analysis, redundancy elimination, loop and cache optimization, register allocation, local and global instruction scheduling, and modulo scheduling. —W. (W.) Wilken

(change in existing course—eff. spring 16)

244. Principles of Concurrent Programming (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: courses 20, 130. Pass One and Pass Two open to Graduate Students in Computer Science only. Fundamental concepts and applications of concurrent programs; concurrent program verification and derivation; synchronization mechanisms in programming languages; distributed programming techniques; case studies of languages. —F. (F.) Olsson, Panjay

(change in existing course—eff. spring 16)

252. Computer Networks (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 152B. Pass 1 and Pass 2 open to Graduate Students in Computer Science only. Internet protocol based computer networks, transport, network layer protocols. High speed LAN technologies: Ethernet, Asynchronous Transfer Mode (ATM). Delay models in data networks: analysis of multiaccess techniques in polling, ring, random access networks. Multimedia applications requirements and design. —Ghosal, Mukherjee, Mohapatra

(change in existing course—eff. spring 16)

253. Network Theory and Applications (4)
Lecture/discussion—4 hours. Prerequisite: Mathematics 22A, Mathematics 22B, Statistics 13 or 120; experience with computer software, or consent of instructor. Develops the mathematical theory underlying growth, structure and function of networks with applications to physical, social, biological and engineered systems. Topics include network growth, resilience, epidemiology, phase transitions, software and algorithms, routing and search control, cascading failures. (Same course as Mechanical & Aeronautical Engineering 253.) Offered in alternate years. —(III). D’Souza

(new course—eff. fall 15)

275A. Advanced Computer Graphics (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 175 or 177 or 178. Advanced topics in computer graphics. Hidden surface models, rendering of various surface types, subdivision methods, shading techniques, anti-aliasing, modeling techniques. —W. (W.) Joy, Hamann, Ma, Staadt

(change in existing course—eff. summer 15)

275B. Advanced Computer Graphics (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 175 or 177 or 178. Pass 1 and Pass 2 open to Graduate Students in Computer Science only. Advanced topics in computer graphics and geometric modeling. Topics taken from advanced research papers in computer graphics, image synthesis, visualization and geometric modeling. Discussion of current research in the field. Offered in alternate years. —W. (W.) Joy, Hamann, Ma, Staadt

(change in existing course—eff. spring 16)

280. Virtual Reality Technology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 175. Pass One and Pass Two open to Graduate Students in Computer Science only. Fundamentals and principles of Virtual Reality (VR) technology. Potential and limits for its useful application. Developing a complete virtual reality application. Offered in alternate years. —S. (S.) Joy

(change in existing course—eff. spring 16)

289A. Special Topics in Computer Science; Computer Science Theory (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer Science Theory. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289B. Special Topics in Computer Science; Architecture (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Architecture. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289C. Special Topics in Computer Science; Programming Languages and Compilers (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Programming Languages and Compilers. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289D. Special Topics in Computer Science; Operating Systems (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Operating Systems. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289E. Special Topics in Computer Science; Software Engineering (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Software Engineering. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289F. Special Topics in Computer Science; Databases (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Databases. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289G. Special Topics in Computer Science; Artificial Intelligence (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Artificial Intelligence. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289H. Special Topics in Computer Science; Computer Graphics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer Graphics. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289I. Special Topics in Computer Science; Networks (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Networks. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289J. Special Topics in Computer Science; Computer-Aided Design (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer-Aided Design. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289K. Special Topics in Computer Science; Scientific Computing (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Scientific Computing. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289L. Special Topics in Computer Science; Computer Science (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer Science. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289M. Special Topics in Computer Science; Security (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Security. May be repeated for credit when topic differs. —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

289N. Special Topics in Bioinformatics and Computational Biology (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Bioinformatics and Computational Biology. May be repeated for credit when topic differs. Offered irregularly. —(S/U grading only.) —F. W. S. (F, W, S.)

(change in existing course—eff. summer 15)

Professional

390. The Teaching of Computer Science (1)
Discussion—1 hour. Prerequisite: meet qualifications for teaching assistant and/or associate-in in Pass One and Pass Two open to Graduate Students in Computer Science only. Computer Science Computer Science. Participation as a teaching assistant or associate-in in a designated engineering course. Methods of leading discussion groups or laboratory sections, writing and grading quizzes, use of laboratory equipment, and grading laboratory reports. May be repeated for credit. (S/U grading only.) —F. W. S. (F, W, S.)

(change in existing course—eff. spring 16)
147. Microelectromechanical Systems (4)
Lecture—2 hours, laboratory—3 hours, discussion—1 hour. Prerequisite: Computer Science Engineering 17. Restricted to upper division standing in College of Engineering. Introduction to the theory and practice of micro-electromechanical systems (MEMS), including fundamentals of micro-nano-fabrication, microscale sensing and actuation, selfassembly, microfluidics and lab-on-a-chip. Weekly hands-on laboratory sections are emphasized on implementation and utilization of MEMS technologies. Some course as Biomedical Engineering 118 | GE credit: SciEng | QL, SE.—F, W. (W.)
(change in existing course—eff. winter 15)

161. Probabilistic Analysis of Electrical and Computer Systems (4)
Lecture—3 hours, discussion—1 hour. Prerequisite: course 180A, Computer Science Engineering 30. Introduces basic aspects of computer architecture, including computer performance measurement, instruction set design, computer microarchitecture, pipelined/non-pipelined implementation, and memory hierarchies (cache and virtual memory). Presents a simplified Reduced Instruction Set Computer using logic design methods from the prerequisite course. GE credit: SciEng | SE.—F, S. (F, S.)
(change in existing course—eff. spring 16)

172. Embedded Systems (4)
Lecture—2 hours; laboratory—6 hours. Prerequisite: course 100; and course 170 or Computer Science Engineering 154A. Introduction to embedded-system hardware and software. Topics include: embedded processor and memory architecture, input/output, hardware and software, including interrupts and direct memory access; interfacing with sensors and actuators; wired and wireless embedded networking. GE credit: SciEng | SE.—F, W, S. (W, S.)
(change in existing course—eff. winter 16)

189A. Special Topics in Electrical Engineering and Computer Science; Computer Science (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topic in Computer Science. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE.—F, W, S. (F, W, S.)
(change in existing course—eff. summer 15)

189B. Special Topics in Electrical Engineering and Computer Science; Programming Systems (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Programming Systems. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE.—F, W, S. (F, W, S.)
(change in existing course—eff. summer 15)

189C. Special Topics in Electrical Engineering and Computer Science; Digital Systems (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Digital Systems. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE.—F, W, S. (F, W, S.)
(change in existing course—eff. summer 15)
189D. Special Topics in Electrical Engineering and Computer Science; Communication (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Communication. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189E. Special Topics in Electrical Engineering and Computer Science; Signal Transmission (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Signal Transmission. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189F. Special Topics in Electrical Engineering and Computer Science; Digital Communication (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Digital Communication. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189G. Special Topics in Electrical Engineering and Computer Science; Control Systems (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Control Systems. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189H. Special Topics in Electrical Engineering and Computer Science; Robotics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Robotics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189I. Special Topics in Electrical Engineering and Computer Science; Signal Processing (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Signal Processing. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189J. Special Topics in Electrical Engineering and Computer Science; High-Frequency Phenomena and Devices (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in High-Frequency Phenomena and Devices. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189L. Special Topics in Electrical Engineering and Computer Science; Solid-State Devices and Physical Electronics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Solid-State Devices and Physical Electronics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189M. Special Topics in Electrical Engineering and Computer Science; Systems Theory (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Systems Theory. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189N. Special Topics in Electrical Engineering and Computer Science; Active and Passive Circuits (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Active and Passive Circuits. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189O. Special Topics in Electrical Engineering and Computer Science; Integrated Circuits (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Integrated Circuits. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189P. Special Topics in Electrical Engineering and Computer Science; Computer Software (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Computer Software. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189Q. Special Topics in Electrical Engineering and Computer Science; Computer Engineering (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Computer Engineering. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189R. Special Topics in Electrical Engineering and Computer Science; Microprocessing (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Microprocessing. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189S. Special Topics in Electrical Engineering and Computer Science; Electronics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Electronics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189T. Special Topics in Electrical Engineering and Computer Science; Electromagnetics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Electromagnetics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189U. Special Topics in Electrical Engineering and Computer Science; Optoelectronics (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Optoelectronics. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

189V. Special Topics in Electrical Engineering and Computer Science; Computer Networks (1-5)
Lecture; laboratory; lecture/laboratory. Prerequisite: consent of instructor. Special topics in Computer Networks. May be repeated for credit when topic differs. Offered irregularly. GE credit: SciEng | SE — F, W, S. [F, W, S].

195A. Autonomous Vehicle Design Project (3)
Workshop—1 hour; laboratory—6 hours. Prerequisite: Computer Science and Engineering 30; course 180A, and either 1108, 157A (may be taken concurrently), 180B, or 60. restricted to majors. Design and construct an autonomous race car. Work in groups to design, build and test speed control circuits, track sensing circuits, and a steering control loop. (Deferred grading only pending completion of sequence.) GE credit: SciEng | SE — F, W, S. [F, W, S].

Graduate
210. MOS Analog Circuit Design (3)
Lecture—3 hours. Prerequisite: course 140A and 1108. Analysis and design of MOS amplifiers, bias circuits, voltage references and other analog circuits. Stability and compensation of feedback amplifiers. Introduction to noise analysis in MOS circuits. — F, (F)

217. Biomedical Electronics (4)
Lecture—3 hours; project. Prerequisite: course 210 or consent of instructor; special consideration and accomodation will be made for biomedical or signal processing majors who have not taken 210. Circuit design for medical applications including weak inversion amplifiers; integrated U/I filters; chopper stabilization; electrochemical interfaces; neurostimulation pulse generation; wireless powering of and communication with implantable devices. Electro-physiological signaling and aspects of signal processing for biomedical systems. — S, (S)

229. RF-MEMS and Adaptive Wireless Frontends (4)
Lecture—3 hours; discussion—3 hours. Prerequisite: course 130A. Focuses on the modeling, design, fabricication and characterization of RF-MEMS while providing a thorough introduction to the technology with an emphasis on how it will benefit the design of adaptive RF/microwave wireless systems. Offered in alternate years. — S, Liu

231A. Plasma Physics and Controlled Fusion (3)
Lecture—3 hours. Prerequisite: consent of instructor. Equilibrium plasma properties; single particle motion; fluid equations; waves and instabilities in a
Fluid plasma; plasma kinetic theory and transport coefficients; linear and nonlinear Vlasov theory; fluctuations, correlations and radiation; inertial and magnetic confinement systems in controlled fusion. — F, W, S. (F, W, S.) Hwang, Luhmann (new course—eff. spring 15)

231B. Plasma Physics and Controlled Fusion (3)
Lecture—3 hours. Prerequisite: course 231A; consent of instructor. Equilibrium plasma properties; single-particle motion; fluid equations; waves and instabilities in a fluid plasma; plasma kinetic theory and transport coefficients; linear and nonlinear Vlasov theory; fluctuations, correlations and radiation; inertial and magnetic confinement systems in controlled fusion. — F, W, S. (F, W, S.) Hwang, Luhmann (new course—eff. spring 15)

231C. Plasma Physics and Controlled Fusion (3)
Lecture—3 hours. Prerequisite: course 231B; consent of instructor. Equilibrium plasma properties; single-particle motion; fluid equations; waves and instabilities in a fluid plasma; plasma kinetic theory and transport coefficients; linear and nonlinear Vlasov theory; fluctuations, correlations and radiation; inertial and magnetic confinement systems in controlled fusion. — F, W, S. (F, W, S.) Hwang, Luhmann (new course—eff. spring 15)

234A. Physics and Technology of Microwave Vacuum Electron Beam Devices I (4)
Lecture—4 hours. Prerequisite: B.S. degree in physics or electrical engineering or the equivalent background. Physics and technology of electron beam emission, flow and transport, electron gun design, space charge waves and klystrons. Offered in alternate years. — F. (new course—eff. fall 15)

234B. Physics and Technology of Microwave Vacuum Electron Beam Devices II (4)
Lecture—4 hours. Prerequisite: course 234A. Theory and experimental design of traveling wave tubes, backward wave oscillators, and extended interaction oscillators. Offered in alternate years. — F, W, S. (F, W, S.) Luhmann (new course—eff. spring 16)

234C. Physics and Technology of Microwave Vacuum Electron Beam Devices III (4)
Lecture—4 hours. Prerequisite: course 234A. Physics and technology of gyrotrons, gyro-amplifiers, free electron lasers, magnetrons, crossed-field amplifiers and relativistic devices. Offered in alternate years. — F, W, S. (F, W, S.) Luhmann (new course—eff. fall 15)

245. Micro- and Nano-Technology in Life Sciences (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Survey of biomedical device design from the engineering and biophysical perspectives; micro-/nano-fabrication and characterization techniques; surface chemistry and mass transfer; essential biological processes and models; proposal development skills to merge aforementioned themes in a multidisciplinary project. [Same course as Chemical Engineering 245 and Materials Science and Engineering 245.] — S. (S.) Seker (change in existing course—eff. winter 16)

248. Photovoltaics and Solar Cells (3)
Lecture—3 hours. Prerequisite: course 140B or equivalent, or consent of instructor. Physics and application of photovoltaics and solar cells, including design, fabrication technology, and grid incorporation. Mono and multicrystalline silicon devices; thin-film technologies, heterojunction and organic-semiconductor technologies. Collectors, electrical inverters and infrastructure issues. Challenges and concerns. [Same course as Engineering-Material Science 246.] Offered in alternate years. — W. Hunt, Moule (new course—eff. fall 14)

272. High-Performance Computer Architecture (4)
Lecture—4 hours. Prerequisite: course 270 or Computer Science Engineering 201A. Designing and analysis of high performance computer architecture with emphasis on vector processing, onchip interconnect networks, chip-level multiprocessors, memory and storage subsystem design and impact of technological advances on computer architecture. — S. (S.) Akella, Ferrans (change in existing course—eff. spring 15)

289A. Special Topics in Electrical and Computer Engineering: Computer Science (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Computer Science. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289B. Special Topics in Electrical and Computer Engineering: Programming Systems (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Programming Systems. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289C. Special Topics in Electrical and Computer Engineering: Digital Systems (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Digital Systems. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289D. Special Topics in Electrical and Computer Engineering: Digital Systems (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Digital Systems. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289E. Special Topics in Electrical and Computer Engineering: Signal Transmission (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Signal Transmission. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289F. Special Topics in Electrical and Computer Engineering: Digital Communication (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Digital Communication. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289G. Special Topics in Electrical and Computer Engineering: Control Systems (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Control Systems. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289H. Special Topics in Electrical and Computer Engineering: Robotics (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Robotics. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289I. Special Topics in Electrical and Computer Engineering: Signal Processing (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Signal Processing. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289J. Special Topics in Electrical and Computer Engineering: Solid-State Devices and Physical Electronics (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Solid-State Devices and Physical Electronics. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289K. Special Topics in Electrical and Computer Engineering: High Frequency Phenomena and Devices (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in High Frequency Phenomena and Devices. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289L. Special Topics in Electrical and Computer Engineering: Solid-State Devices and Physical Electronics (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Solid-State Devices and Physical Electronics. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289M. Special Topics in Electrical and Computer Engineering: Systems Theory (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Systems Theory. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289N. Special Topics in Electrical and Computer Engineering: Active and Passive Circuits (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Active and Passive Circuits. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289O. Special Topics in Electrical and Computer Engineering: Integrated Circuits (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Integrated Circuits. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

289P. Special Topics in Electrical and Computer Engineering: Computer Software (1-5)
Lecture/laboratory—1-5 units. Prerequisite: consent of instructor. Special topic in Computer Software. May be repeated for credit when topic differs. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)
Graduate
245. Micro- and Nano-Technology in Life Sciences (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Survey of biomedical device design from the engineering and biological perspectives; micro-/nano-fabrication and characterization techniques; surface chemistry and mass transfer; essential biological processes and models; proposal development skills to merge aforementioned themes in a multidisciplinary project. (Same course as Electrical and Computer Engineering 245 and Chemical Engineering 245.)—S. (R) Seker
(change in existing course—eff. winter 16)

246. Photovoltaics and Solar Cells (3)
Lecture—3 hours. Prerequisite: Electrical & Computer Engineering 140B or equivalent, or permission of instructor. Physics and application of photovoltaics and solar cells, including design, fabrication technologies, and grid incorporation. Mono and microcrystalline silicon devices; thin-film technologies, heterojunction and organic-semiconductor technologies. Collectors, electrical inverters and infrastructure issues. Challenges and concerns. (Same course as Electrical & Computer Engineering 248.) Offered in alternate years.—W. Hunt, Moule
(new course—fall 14)

250A. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250A.)—S. (S)
(change in existing course—eff. summer 15)

250B. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250B.)—S. (S)
(change in existing course—eff. summer 15)

250C. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250C.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)

250D. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250D.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)

250E. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250E.)—F. (F)
(change in existing course—eff. summer 15)

250F. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250F.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)

Engineering: Materials Science and Engineering

New and changed courses in Materials Science and Engineering (EMS)

Lower Division
2. Materials Marvels (2)
Lecture/discussion—2 hours. Restricted to lower division students only. Role of materials in technological societies and their impact on our way of living. Exploration of how materials are extracted from the earth, processed, and shaped into products, including discussion of disposal and re-use of materials. GE credit: SciEng | SE. —F. W. S. (F, W, S)
(change in existing course—eff. winter 16)

Graduate
245. Micro- and Nano-Technology in Life Sciences (4)
Lecture/discussion—4 hours. Prerequisite: graduate standing or consent of instructor. Survey of biomedical device design from the engineering and biological perspectives; micro-/nano-fabrication and characterization techniques; surface chemistry and mass transfer; essential biological processes and models; proposal development skills to merge aforementioned themes in a multidisciplinary project. (Same course as Electrical and Computer Engineering 245 and Chemical Engineering 245.)—S. (R) Seker
(change in existing course—eff. summer 15)

246. Photovoltaics and Solar Cells (3)
Lecture—3 hours. Prerequisite: Electrical & Computer Engineering 140B or equivalent, or permission of instructor. Physics and application of photovoltaics and solar cells, including design, fabrication technologies, and grid incorporation. Mono and microcrystalline silicon devices; thin-film technologies, heterojunction and organic-semiconductor technologies. Collectors, electrical inverters and infrastructure issues. Challenges and concerns. (Same course as Electrical & Computer Engineering 248.) Offered in alternate years.—W. Hunt, Moule
(new course—fall 14)

250A. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250A.)—S. (S)
(change in existing course—eff. summer 15)

250B. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250B.)—S. (S)
(change in existing course—eff. summer 15)

250C. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250C.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)

250D. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250D.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)

250E. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250E.)—F. (F)
(change in existing course—eff. summer 15)

250F. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: course 147 or consent of instructor. Selected topics of current interest in polymer and fiber sciences. Topics will vary each time the course is offered. (Same course as Fiber and Polymer Science 250F.) Offered irregularly.—W. (W)
(change in existing course—eff. summer 15)
Engineering: Mechanical

New and changed courses in Engineering: Mechanical (EME)

Upper Division
107A. Experimental Methods (3) (cancelled course—eff. fall 16)
107B. Experimental Methods (3) (cancelled course—eff. fall 16)
164. Introduction to Heating, Ventilation and Air Conditioning Systems (4) Lecture—4 hours. Prerequisite: C- or better in both course 106 and 165. Introduction to basic mechanisms and processes associated with heating, ventilation and air conditioning (HVAC), including equipment and systems used for HVAC in residential and commercial buildings. Only 2 units for students who have completed Civil and Environmental Engineering 125. Offered in alternate years. GE credit: SciEng | SE.—W. (W') Madera (change in existing course—eff. spring 16)
189A. Selected Topics in Mechanical Engineering: Energy Systems and the Environment (1-5) Prerequisite: consent of instructor. Directed group study in Energy Systems and the Environment. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189B. Selected Topics in Mechanical Engineering: Engineering Controls (1-5) Prerequisite: consent of instructor. Directed group study in Engineering Controls. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189C. Selected Topics in Mechanical Engineering: Engineering Dynamics (1-5) Prerequisite: consent of instructor. Directed group study in Engineering Dynamics. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189D. Selected Topics in Mechanical Engineering: Biomechanics (1-5) Prerequisite: consent of instructor. Directed group study in Biomechanics. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189E. Selected Topics in Mechanical Engineering: Fluid Mechanics (1-5) Prerequisite: consent of instructor. Directed group study in Fluid Mechanics. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)

189F. Selected Topics in Mechanical Engineering: Manufacturing Engineering (1-5) Prerequisite: consent of instructor. Directed group study in Manufacturing Engineering. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189G. Selected Topics in Mechanical Engineering: Mechanical Engineering and Product Design (1-5) Prerequisite: consent of instructor. Directed group study in Mechanical Engineering and Product Design. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189H. Selected Topics in Mechanical Engineering: Mechanotronics Systems (1-5) Prerequisite: consent of instructor. Directed group study in Mechanotronics Systems. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189I. Selected Topics in Mechanical Engineering: MEMS/Nanotechnology (1-5) Prerequisite: consent of instructor. Directed group study in MEMS/Nanotechnology. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189K. Selected Topics in Mechanical Engineering: Thermodynamics (1-5) Prerequisite: consent of instructor. Directed group study in Thermodynamics. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)
189L. Selected Topics in Mechanical Engineering: Vehicle and Transportation Systems (1-5) Prerequisite: consent of instructor. Directed group study in Vehicle and Transportation Systems. May be repeated for credit when the topic is different. Offered irregularly. (change in existing course—eff. summer 15)

Engineering: Mechanical and Aerospace

New and changed courses in Engineering: Mechanical and Aerospace (MAE)
Graduate
253. Network Theory and Applications (4) Lecture/discussion—4 hours. Prerequisite: Mathematics 22A; Mathematics 22B; Statistics 130 or 120; experience with computer software; or consent of instructor. Develops the mathematical theory underlying growth, structure and function of networks with applications to physical, social, biological and engineered systems. Topics include network growth, resilience, epidemiology, phase transitions, software and algorithms, routing and search control, cascading failures. (Same course as Computer Science Engineering 253.) Offered in alternate years.—III. D'Souza (new course—eff. fall 15)

English

New and changed courses in English (ENL)

Lower Division
3NF. Introduction to Creative Writing: Non-Fiction (4) Lecture/discussion—4 hours. Prerequisite: completion of Entry Level Writing requirement. Elementary principles of writing creative non-fiction. Work in prescribed literary forms (such as essay, meditation, biography, memoir, book review, documentary, or experimental non-fiction forms) and forms of students’ choosing. No final examination. May be repeated one time for credit when instructor differs. GE credit: ArtHum, Writ | Art, W. —F, W, S, F, W, S. (new course—eff. fall 15)
30A. Survey of American Literature (4) (cancelled course—eff. fall 15)
30B. Survey of American Literature (4) (cancelled course—eff. fall 15)
46A. Masterpieces of English Literature (4) (cancelled course—eff. spring 15)
46B. Masterpieces of English Literature (4) (cancelled course—eff. spring 15)
46C. Masterpieces of English Literature (4) (cancelled course—eff. spring 15)

Upper Division
100FA. Creative Writing Advanced Fiction (4) Discussion—4 hours. Prerequisite: course 100F. Priority given to English majors; admission by application only. Development and evaluation of students’ work in prose, primarily in the workshop format. Some reading and discussion of published novels and short stories. Conferences with individual students once per quarter. May be repeated one time for credit with consent of instructor.—S. (S.) (change in existing course—eff. fall 14)
100PA. Creative Writing Advanced Poetry (4) Discussion—4 hours. Prerequisite: course 100P. Priority to English majors; admission by application only. Development and evaluation of students’ work in poetry, primarily in the workshop format. Some reading and discussion of published works of poetry. Conferences with individual students once per quarter. May be repeated one time for credit with consent of instructor.—S. (S.) (change in existing course—eff. fall 14)
139. Topics in Global Literatures and Cultures (4) Lecture—3 hours; extensive writing or discussion. Prerequisite: course 3 or University Writing Program 1 or equivalent. Historically or thematically organized study of Anglophone literature at the global scale. Possible emphases: globalization of English and its literatures; the history of “world literature”; literatures of British imperialism; questions of translation. May be repeated two times for credit when content differs. GE credit: ArtHum, Div | Writ | AH, WC, WE.—II. (change in existing course—eff. fall 03)
146. American Literature 1900-1943 (4) Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1 or equivalent. Historically or thematically focused study of American literature (drama, poetry, prose fiction) from the period between 1900 and the end of World War II. GE credit: ArtHum, Wrt | ACHG, AH, DD, WE.

(change in existing course—eff. fall 14)

147. American Literature, 1945 to the Present (4) Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1 or equivalent. Historically or thematically focused study of American literature (drama, poetry, prose fiction) from the period between 1945 and the present. GE credit: ArtHum, Wrt | ACHG, AH, DD, WE.

(change in existing course—eff. fall 14)

158B. The American Novel from 1900 to the Present (4) Lecture—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of important American novelists from 1900 to the present; authors may include Willa Cather, Nathanael West, William Faulkner, Ralph Ellison, Zora Neale Hurston, Thomas Pynchon, Ishmael Reed, Maria Helena Viramontes, Rachel Kushner, and others. GE credit: ArtHum, Wrt | AH, DD, WE. - F, W, S. (F, W, S.)

(change in existing course—eff. winter 16)

160. Film as Narrative (4) Lecture—3 hours; film viewing—3 hours. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Study of modern film (1930 to present) as a storytelling medium. Offered in alternate years. GE credit: ArtHum, Wrt | AH, DD, WE. - F, W, S. (F, W, S.)

(change in existing course—eff. fall 14)

161A. Film History I: Origins to 1945 (4) Lecture—3 hours; film viewing—3 hours. Prerequisite: course 3 or University Writing Program 1. Cultural and aesthetic history of film making from its origins in the 1890's through 1945. (Courses 161A and 161B need not be taken in sequence.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE. - F, W, S. (F, S.)

(change in existing course—eff. fall 14)

161B. Film History II: 1945 to present (4) Lecture—3 hours; film viewing—3 hours. Prerequisite: course 3 or University Writing Program 1. Cultural and aesthetic history of film making from 1945 through the present. (Courses 161A and 161B need not be taken in sequence.) Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE. - F, W, S. (F, S.)

(change in existing course—eff. fall 14)

162. Film Theory and Criticism (4) Lecture—3 hours; film viewing—3 hours. Prerequisite: course 3 or University Writing Program 1. Film theory and criticism, with a study of ten major works of international film art. Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WE. - F, W, S. (F, S.)

(change in existing course—eff. fall 14)

163. Literary Study in the British Isles (4) Lecture—3 hours; discussion—1 hour. Prerequisite: Course 3 or University Writing Program 1. Enrollment by application only through the Education Abroad Center. Literary study in the British Isles: On-site study of the literature, film, and/or performance of the British Isles. May be repeated two times if subject matter differs. GE credit: ArtHum, Wrt | AH, WC, WE. - S. (S.)

(change in existing course—eff. fall 14)

172. Video Games and Culture (4) Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or Technocultural Studies 1 or Science and Technology Studies 1 or equivalent. Critical approaches to the study of video games, focusing on formal, historical, and cultural modes of analysis and the history of software and hardware in North American and global contexts. Reference to games' effects, politics, economics, literature, media, and the arts. (Same course as Cinema and Technocultural Studies 172 and Science and Technology Studies 172.) GE credit: ArtHum or SocSci | ACHG, AH or SS, VL.

(change in existing course—eff. spring 15)

173. Science Fiction (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 3 or Science and Technology Studies 1 or equivalent. Literary modes and methods of science fiction. Representative texts, authors, and themes of the genre—e.g., time travel, alternative universes, and utopias. Relations of science fiction to science, philosophy, and culture. (Same course as Science and Technology Studies 173.) GE credit: ArtHum, Wrt | AH, WE. - W.

(change in existing course—eff. winter 15)

175. American Literary Humor (4) Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1, or standing above freshman level. American humorous vision of man, nature, and the supernatural. Includes one or more of the following: colonial humor; southwestern and New England humor; pre- and post-Civil War master; local colorists; journalistic gagflies; anti-provincialists; modernist poets and prose writers; black humor. GE credit: ArtHum, Wrt | ACHG, AH, WE. - S. (S.)

(change in existing course—eff. spring 15)

197T. Tutoring in English (1-5) Tutoring—1-5 hours. Prerequisite: upper division standing and consent of Chairperson. Leading of small voluntary study groups affiliated with one of the department's regular courses. Does not fulfill requirement for major. May be repeated up to 8 units for credit. (P/NF grading only).—F, W, S. (F, W, S.)

(change in existing course—eff. spring 15)

199F. Student Facilitated Course Development (1-4) Prerequisite: course 3 or UWP 1; consent of instructor. Under the supervision of a faculty member, an undergraduate student plans and develops the course they will offer under 98F/18F. Offered irregularly. (S/U grading only.)—new course—eff. winter 16

Graduate

237. Seminar for Writers (4) Seminar—3 hours; extensive writing. Prerequisite: graduate standing. Varied topics in the study of literature and literary culture craft and poetics from the perspective of the writer/practitioner. May be repeated two times for credit if focus differs. Offered irregularly. - W. (W.)

(new course—eff. fall 15)

290. Creative Writing: Special Topic (4) Seminar—3 hours; conference—1 hour. Prerequisite: consent of instructor. Writing that falls outside the generic confines of traditional genres (fiction, poetry, and nonfiction) or traditional workshop formats. Evaluation of written materials and individual student conferences. May be repeated for credit. Offered irregularly.—F, W, S.

(new course—eff. fall 15)

290F. Creative Writing: Fiction (4) Seminar—3 hours; conference—1 hour. Prerequisite: consent of instructor; graduate standing, with preference given to those enrolled in master’s program in Creative Writing. Writing of prose fiction. Evaluation of written materials and individual student conferences. May be repeated for credit.—F, W, S. (F, W, S.)

(change in existing course—eff. winter 16)

290N. Creative Writing: Non-Fiction (4) Seminar—3 hours; conference—1 hour. Prerequisite: consent of instructor; graduate standing, with preference given to those enrolled in master’s program in Creative Writing. Writing of poetry. Evaluation of written materials and individual student conferences. May be repeated for credit.—F, W, S. (F, W, S.)

(change in existing course—eff. winter 16)

Entomology

New and changed courses in Entomology (ENT)

Lower Division

10. Natural History of Insects (3) Lecture—3 hours. Introduction to the insects detailing their great variety, structures and functions, habits, and their significance in relation to plants and animals including man. Designed for students not specializing in entomology. Not open for credit to students who have had course 100, but students who have taken this course may take course 100 for credit. GE credit: SciEng | SE, SL. - W. (W., R.) Kimsey, Parrella.

(change in existing course—eff. fall 14)

90X. Special Topics in Entomology (2) Seminar—2 hours. Prerequisite: consent of instructor. Freshman seminar course for in-depth examination of a special topic within the subject area. May be repeated two times for credit. (P/NF grading only).—F, W, S.

(change in existing course—eff. winter 15)

Upper Division


(change in existing course—eff. winter 15)

116L. Aquatic Insect Collection (2) Laboratory—4 hours; field work—2 hours. Prerequisite: high school biology recommended. Restricted to 22 students. Students will learn to collect aquatic insects and to identify them to family and genus levels. Collections will require two, one-day weekend field trips (by arrangement). Collection requirement is 40 families, with 20 identified to Genus level. No credit for students who have completed the 5-unit option for course 116. - S. (S.) Lawler.

(change in existing course—eff. winter 15)
Environmental Horticulture

New and changed courses in Environmental Horticulture (ENH)

Lower Division

1. Introduction to Environmental Horticulture/Urban Forestry (3)
   Lecture—3 hours. Introduction to the use of plants to enhance the physical, visual and social environment, the use of ecological principles in developing sustainable, low maintenance landscape systems, and the career opportunities in these areas. GE credit: SciEng | SE, SL.—F (F.) Volder
   (change in existing course—eff. winter 16)

Upper Division

129. Analysis of Horticultural Problems (4)
   (cancelled course—eff. spring 15)

130. Turfgrass and Amenity Grassland Utilization and Management (4)
   (cancelled course—eff. fall 15)

160. Restoration Ecology (3)
   Lecture—3 hours. Prerequisite: Plant Biology/Evolution & Ecology 117 or Evolution & Ecology 121 or Plant Biology 147 or equivalent course in ecology/plant ecology. Conceptual bases of restoration ecology; tools used by restoration ecologists to solve practical problems; scope and success of actual restoration projects. GE credit: SciEng | SE, SL, WE.—S (S.) Evine
   (change in existing course—eff. fall 15)

Graduate

229. Analysis of Horticultural Problems (5)
   (cancelled course—eff. winter 15)

Environmental Science and Management

New and changed courses in Environmental Science and Management (ESM)

Upper Division

140. Culinary and Medicinal Herbs (3)
   (cancelled course—eff. spring 15)

Environmental Science and Policy

New and changed courses in Environmental Science and Policy (ESP)

Lower Division

10. Current Issues in the Environment (3)
   Lecture—3 hours. Prerequisite: elementary biology recommended. The science behind environmental issues, and policies affecting our ability to solve domestic and international environmental problems. Resources, environmental quality, regulation, environmental perception and conservation. Integrative case studies. Not open for credit to students who have completed course 1. GE credit: SciEng | SE or SS, SL, WE.—W (W.) Loux
   (change in existing course—eff. fall 14)

Upper Division

111. Marine Environmental Issues (1)
   Discussion—1 hour. Prerequisite: consent of instructor. Examination of critical environmental issues occurring in coastal waters including the effects of climate change, overfishing, and other human impacts. Through readings and group discussions, students will develop an integrative understanding of the oceanographic and ecological processes. May be repeated two times for credit when topics differ. [Same Course as Evolution and Ecology 111] GE credit: SciEng | SE, SL, SS.—S (S.) Grosholz
   (change in existing course—eff. summer 15)

123. Introduction to Field and Laboratory Methods in Ecology (4)
   Lecture—2 hours; laboratory—2 hours; fieldwork—4 hours. Prerequisite: course 100 or Evolution and Ecology 101 or the equivalent. Statistics 100 or the equivalent; Introduction to methods used for collecting ecological data in field and laboratory situations. Methods used by population ecologists and community ecologists; emphasis on experimental design, scientific writing and data analysis. Offered in alternate years. GE credit: SciEng | SE, SL.—S. (S.) Grosholz
   (change in existing course—eff. spring 15)

124. Marine and Coastal Field Ecology (3)
   Lecture—2 hours; discussion—1 hour; laboratory—3 hours; fieldwork—3 hours. Prerequisite: upper division standing or consent of instructor. Introduction to animal biology (Biological Sciences 18B) recommended; residence at or near Bodega Marine Lab required. Enrollment restricted to application at http://www.bml.ucsd.edu. Ecology of marine populations and communities living in diverse habitats along the California coast. Hands-on learning using scientific process and tools of the biological trade to address ecological questions arising during field trips. Critical thinking through discussing scientific literature. Offered irregularly. GE credit: SciEng | SE, SL
   (change in existing course—eff. fall 14)

150A. Physical and Chemical Oceanography (4)
   Lecture—3 hours; discussion—1 hour. Prerequisite: Environmental Science and Policy/Geology 116, Physics 98, Mathematics 22C, Chemistry 1C, or upper division standing in a natural science and consent of instructor. Physical and chemical properties of seawater, fluid dynamics, air-sea interaction, cur- rents, waves, tides, mixing, major oceanic geo-chemical cycles. (same course as Geology 150A.) GE credit: SciEng | QL, SE.—F (F.) McClain, Spero
   (change in existing course—eff. fall 14)

152. Coastal Oceanography (3)
   Lecture—2 hours; discussion—1 hour; laboratory—3 hours; fieldwork—3 hours. Prerequisite: upper division standing or consent of instructor; physics (Physics 9B), calculus (Mathematics 21B) and exposure to physical and chemical oceanography (Geology/Environmental Science and Policy 150A) are recommended; residence at or near Bodega Marine Laboratory required. Enrollment restricted to application at http://www.bml.ucsd.edu. Oceanography of coastal waters—including bays, river plumes, nearshore and estuaries; focus on transport patterns, how they are forced and implications for ecological and environmental policy. Prerequisite for student in oceanography, ecology, environmental engineering, geology and hydrology. GE credit: SciEng | SE, SL.—S (S. J.) Largier
   (change in existing course—eff. fall 14)

161. Environmental Law (4)
   Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing and one course in environmental science or political science recommended. Introduction for non-Law School students to some of the principal issues in environmental law and the judicial interpretation of some important environmental statutes, e.g., NEPA. GE credit: SocSci, Writ | SS.—S (S.)
   (change in existing course—eff. fall 13)

173. Land Use and Growth Controls (4)
   Lecture—3 hours; discussion—1 hour. Prerequisite: Political Science 1, Economics 1A, intermediate statistics (Sociology 106 or Statistics 102 or the equivalent), and local government (Applied Behavioral Science 157, 158 or Political Science 100, 102 or 104). Exposes students to the economic, political, and legal factors affecting land use and growth controls, and helps students critically evaluate written materials in terms of their arguments and supporting data. GE credit: SocSci | SS.—S (S.)
   (change in existing course—eff. fall 13)

178. Applied Research Methods (4)
   Lecture—3 hours; discussion—1 hour. Prerequisite: Statistics 103 or Sociology 106 or the equivalent. Research methods for analysis of urban and regional land use, transportation, and environmental problems. Survey research and other data collection techniques; demographic analysis; basic forecasting, air pollution, and transportation studies. Collection, interpretation, and critical evaluation of data. GE credit: SocSci | QL, SS—W (W.)
   (change in existing course—eff. fall 14)

179. Environmental Impact Assessment (4)
   Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing and one course in environmental science (course 100, 110 or the equivalent). Introduction to the information resources and methods typically used in environmental impact analysis. Emphasis on how environmental information is applied to planning, environmental regulations, and public policymaking, with case studies from California land use and natural resource policy. GE credit: SocSci | SS.—W (W.)
   (change in existing course—eff. fall 14)

Environmental Toxicology

New and changed courses in Environmental Toxicology (ETX)

Upper Division

140. Genes and the Environment (3)
   Lecture/discussion—3 hours. Prerequisite: Biological Science 101 required or permission of instructor; coursework in genetics and molecular biology and/or environmental toxicology recommended. Evaluation of evidence that human health and disease susceptibility result from complex interactions between genes and the environment. Emphasis on cancer, metabolic, cardiovascular, and neurological health outcomes assessed by genotoxicity and toxicogenomic methods. Offered in alternate years.—F. (F.) La Merrill
   (new course—eff. fall 15)

194HA. Honors Research (3)
   Discussion—1 hour; laboratory—6 hours. Prerequisite: senior standing; minimum GPA of 3.250; consent of instructor. Specific research project conducted under the supervision of a faculty sponsor. Experience to include experimental design, learning new techniques, data analysis and interpre-
Epidemiology

New and changed courses in Epidemiology (EPI)

Graduate

205B. Integration of Epidemiologic Concepts (2)

Discussion—2 hours. Prerequisite: Preventive Veterinary Medicine 405/course 205A can be taken concurrently. In-depth analysis and integration of basic epidemiologic concepts and approaches to epidemiologic research presented in Preventive Veterinary Medicine 405/course 205A, with more mathematically and theoretical basis and examples from veterinary and human medicine, including outbreak investigation, infectious disease epidemiology, properties of diagnostic tests, study design, and surveillance. — F. (F)

[change in existing course—fall 15]

206. Epidemiologic Study Design (4)

Lecture—30 sessions; discussion—9 sessions; laboratory—2 sessions. Prerequisite: course 205 or consent of instructor. Building on concepts presented in course 205. Concepts of epidemiologic study design-clinical trials, observational cohort studies, case control studies-introduced in course 205A are covered in more depth, using a problem-based format. Discussion of published epidemiologic studies. [Same course as Preventive Veterinary Medicine 206.] (new course—fall 15)

207. Advanced Epidemiologic Methodology (4)

Lecture/discussion—4 hours. Prerequisite: course 206. In-depth integration of advanced epidemiologic concepts. Theory, methods, and applications for observational studies including random and systematic error, confounding, confounder/cutoffs, causal inference, effect modification, internal and external validity, estimability, and interpretation of effect measures, and advanced study designs. [Same course as Public Health Sciences 207.] — S. (S.) Hertz-Picciotto, Kass

[change in existing course—winter 16]

209. History of Epidemiology in Public Health (2)

Lecture—0.5 hours; discussion—1.5 hours. Introduction to the history of epidemiologic research in solving major public health problems. Original historical articles will be read/discussed. Topics may include: infectious disease, accidents/adverse events, nutritional deficiencies, community vaccination trials, occupational exposures, cancer, birth defects, cardiovascular disease, and smoking. [Same course as Public Health Sciences 209.] — W. (W.) Hertz-Picciotto (new course—fall 14)

223. Spatial Epidemiology (3)

Lecture—2 hours; laboratory—3 hours. Prerequisite: course 205A or Preventive Veterinary Medicine 205. Geographic Information Systems (GIS) and spatial statistics. Students are expected to complete a term project based on their graduate research. Offered in alternate years. — W. (W.) Van Benthoem

[change in existing course—fall 15]

230. Introduction to Molecular Epidemiology (3)

Lecture/discussion—3 hours. Prerequisite: course 205. Overview of the modern field of molecular epidemiology. Integrates molecular biology into traditional epidemiologic research by identifying pathways, molecules and genes that influence the risk of developing disease. — S. Schmidt (new course—fall 14)

231. Infectious Disease Epidemiology (3)

Lecture—2 hours; discussion—1 hour. Prerequisite: introductory epidemiology course (e.g., course 205). Infectious disease epidemiology and prevention, with emphasis on human and veterinary diseases of global health importance. Major global health epidemics and challenges of infectious diseases, by mode of transmission. [Same course as Public Health Sciences 211.] — W. (W.) DaRiemer (new course—fall 15)

250. Introduction to Clinical Research Design and Epidemiology (1)

(cancelled course—fall 14)

270. Research Methods in Occupational Epidemiology (3)

Laboratory/discussion—3 hours. Prerequisite: course 205A or Preventive Veterinary Medicine 205; Statistics 102 or Preventive Veterinary Medicine 202. Methods used in epidemiologic research on occupational hazards. Topics include design and analysis of cohort and case-control studies, sample size, measuring disease, controlling for confounding factors, utilization of employment and health data, interpreting negative studies, and analysis software. Offered in alternate years. — S. (S.) Beaumont (change in existing course—fall 15)

290. Seminars in Epidemiology (0.5)

Seminar—0.5 hours. Faculty and students will present and lead discussion of ongoing or published epidemiologic research. [S/U grading only] — F. (F. W. S. (F. W. S.)

[change in existing course—winter 15]

Evolution and Ecology

New and changed courses in Evolution and Ecology (EVE)

Lower Division

12. Life in the Sea (3)

Lecture—3 hours. Diversity of life in the sea; adaptations to physical/chemical ocean environment; marine science research methods; utilization of living marine resources by humans; factors and processes that influence diversity of life, including humans. Limited enrollment. Offered in alternate years. GE credit: SciEng | SE, SL—S. (S.) Williams (change in existing course—spring 15)

13. Sex in the Natural World (3)

Lecture/discussion—3 hours. Explores the diversity, mechanisms and evolution of sexual behaviors across the kingdoms of life. Offered in alternate years. GE credit: SciEng | SE, SL, VL—F. Patricelli (new course—fall 14)

Upper Division

106. Mechanical Design in Organisms (3)

Lecture—2 hours; discussion—1 hour; laboratory—3 hours; fieldwork—3 hours. Prerequisite: upper division standing or consent of instructor; introductory animal biology (Biological Sciences 18 or 28), invertebrate zoology (course 112), and/or ecology (course 101) are recommended; residence at or near Bodega Marine Laboratory. Enrollment restricted to students registered at the UCSC Marine Science Research Center (or at UCSC) and interested in attending a Marine Science lab. Offered in fall 2011 and on Revised General Education (GE) | AH—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences | Div—Domestic Diversity; Wrt—Writing Experience (Wrt 2011 and on Revised General Education (GE) | AH—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences | AGCH—American Cultures | DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience | Quarter Offered: F—Fall; W—Winter; S—Spring; Su—Summer; 2015-2016 offering in parentheses
Exercise Biology

New and changed courses in Exercise Biology (EXB)

Upper Division

106. Human Gross Anatomy (4)
Lecture—4 hours. Prerequisite: Biological Sciences 2A; concurrent enrollment in course 106L or Cell Biology and Human Anatomy 101 strongly recommended. Upper division students only; Pass One open to upper division Exercise Biology or Anthropology majors only; Pass Two open to Seniors in any major; open enrollment at the start of the quarter for upper division students in any major. Detailed study of the gross anatomical structure of the human body, with emphasis on function and clinical relevance to students entering health care professions. (Same course as Cell Biology and Human Anatomy 101.) GE credit: SciEng | SE—W. (W) Gross
(change in existing course—fall 14)

106L. Human Gross Anatomy Laboratory (3)
Laboratory—9 hours. Prerequisite: Biological Sciences 2A; must take course 106 or Cell Biology and Human Anatomy 101 concurrently or have already completed. Upper division students only; Pass One open to upper division Exercise Biology or Anthropology majors only; Pass Two open to Seniors in any major; open enrollment at the start of the quarter for upper division students in any major; mandatory attendance on first day of lab. Detailed study of protected human cadavers in small group format with extensive hands-on experience. (Same course as Cell Biology and Human Anatomy 101.) GE credit: SciEng | SE—W. (W) Gross
(change in existing course—fall 14)

113. Growth and Development in Human Performance (3)
(canceled course—fall 14)

189. International Perspectives in Exercise Biology (4)
Lecture—4 hours. Prerequisite: course 10 or upper division standing in Exercise Biology; consent of instructor: students will be accepted based upon academic merit, personal experience, and academic discipline in order to provide multidisciplinary perspectives. Restricted to 22 students. Compare and contrast exercise science issues between the US and an international location. Identify political, economic, cultural, technological and environmental issues that impact human exercise, physical activity, wellness, and sport from a global perspective. Offered irregularly.
(change in existing course—fall 14)

190C. Research Conference (1)
Discussion—1 hour. Prerequisite: upper division standing in Exercise Biology or related biological science and consent of instructor; concurrent enrollment in course 199. Restricted to upper division students. Research findings and methods in exercise biology. Presentation and discussion of research by faculty and students. May be repeated for credit. (P/NP grading only)—F, W, S. (F, W, S.)
(change in existing course—fall 14)

192. Exercise Biology Internship (1-12)
Internship—3-36 hours. Prerequisite: consent of instructor; enrollment dependent on availability of intern positions. Work experience in the application of physical activity programs to teaching, recreational, clinical or research situations under program faculty supervision. Written report required. May be repeated up to 12 units. (P/NP grading only)—F, W, S. (F, W, S.)
(change in existing course—spring 15)

Fiber and Polymer Science

New and changed courses in Fiber and Polymer Science (FPS)

Graduate

250A. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250A.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)

250B. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250B.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)

250C. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250C.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)

250D. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250D.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)

250E. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250E.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)

250F. Special Topics in Polymer and Fiber Science (3)
Lecture—3 hours. Prerequisite: Fiber and Polymer Science 100 or consent of instructor. Selected topics of current interest in polymer and fiber science. Topics vary each time the course is offered. (Same course as Materials Science and Engineering 250F.)—F, S. (F, S.) Hsieh, Pan, Sun
(change in existing course—summer 15)
Food Science and Technology

New and changed courses in Food Science and Technology (FST)

Lower Division

47. Food Product Development Field Study (1)
   (cancelled course—eff. fall 14)

Upper Division

108. Food Processing Plant Sanitation (2)
   (cancelled course—eff. fall 14)

110. Food Processing (4)
   Lecture—4 hours; discussion—1 hour. Prerequisite: Calculus I, II, & III; Mathematics 16A, 16B, 16C or the equivalent; course 50 (may be taken concurrently). Application of the conservation of mass and energy to food processing. Elements of engineering thermodynamics, fluid mechanics, heat and mass transfer. Quantitative analysis through problem solving and simulation. Not open for credit to students enrolled in College of Engineering. GE credit. SciEng | QL, SE, VL, F (F) McCarthy (change in existing course—eff. winter 15)

110A. Physical Principles in Food Processing (3)
   (cancelled course—eff. fall 14)

110B. Heat and Mass Transfer in Food Processing (3)
   (cancelled course—eff. fall 14)

120. Principles of Meat Science (3)
   (change in existing course—eff. spring 15)

120L. Meat Science Laboratory (2)
   (cancelled course—eff. fall 15)

131. Food Packaging (4)
   (cancelled course—eff. fall 14)

Graduate

201. Food Chemistry and Biochemistry (4)
   Lecture—4 hours. Prerequisite: undergraduate courses in organic chemistry and biochemistry; undergraduate course in food chemistry is recommended. Restricted to graduate standing or consent of instructor. Advanced topics in food chemistry and biochemistry, emphasizing the application of the basic principles of chemistry and biochemistry to food composition, properties, preservation and processing. Chemical structures, interactions, reaction mechanisms and experimental methods are stressed. F (F) G. Smith (change in existing course—eff. winter 15)

Forensic Science

New and changed courses in Forensic Science (FOR)

Graduate

205. Microscopy and Microanalytical Methods in Forensic Science (3)
   Lecture—2 hours; laboratory—1 hour. Prerequisite: consent of instructor. Restricted to students enrolled in the M.S. in Forensic Science Program; s a minimum, year each of the following chemistry, organic chemistry, calculus, & physics. Introduction to optical and electron microscopy. Transmission, diffraction, reflection and absorption, polarized light and polarizing crystals; phase contrast. Radiography; image recording, SEM analysis of gunshot residues, paints, glass. EDS, XRF analysis, signal-to-noise ratios, minimum detectable levels and homogeneity. Offered in alternate years. (S.) van Bentheim (change in existing course—eff. fall 14)

240. Homicide Crime Scene Investigation (3)
   Lecture—2 hours; laboratory—3 hours. Restricted to Forensic Science Masters Program Students; enrollment is limited to 15 students per class. Processing and evaluating complex homicide scenes. Functions and activities of police agencies. Recognition, documentation, identification, and collection of evidence. Event sequence reconstruction. Evidence collection, preservation, report writing. Courtroom presentation. F, S, F (S) Hopkins (change in existing course—eff. fall 14)

263. Forensic Computer Science Investigations (3)
   Lecture—3 hours. Prerequisite: graduate student; consent of instructor. Restricted to students in the Forensic Science Graduate program unless approved by instructor. Discuss the threats to the security of any kind of evidence that is captured, transmitted, or stored digitally and develop critical thinking and basic knowledge of computer forensic science issues in the evaluation of digital evidence. (S.) Peiser (new course—eff. fall 13)

280. Forensic DNA Analysis (3)
   Lecture—3 hours. Prerequisite: coursework in genetics and molecular biology. Graduate standing; consent of instructor required for all students not enrolled in the MS Forensics program. Foundation in theory and practice of forensic DNA analysis; past, present, and emerging technologies; legal and quality assurance issues. DNA extraction, DNA quantitation, multiplex amplification of STR loci, capillary electrophoresis of amplified products, and analysis of STR typing data. (Same course as Environmental Toxicology 280.) W, (W) Von Beroldingen (change in existing course—eff. fall 14)

289. Survey in Forensic Science (3)
   Lecture—3 hours. Restricted to students enrolled in the M.S. in Forensic Science Program. Analytical methods in contemporary forensic science. Clandesinite laboratories in California, crime scene management, examining, and analysis of human hair, forensic ballistics/trajecotory reconstruction, shoe/tire print impressions, serial number restoration, forensic techniques of alcohol measurement, bloodstain pattern interpretation, microscopy of building materials, biological aspect of forensic science. May be repeated for credit when topic differs. F, W, S, (F, W, S) Hopkins (change in existing course—eff. fall 14)

290C. Graduate Research Conference in Forensic Science
   Independent study—1 hour. Restricted to students enrolled in the M.S. in Forensic Science Program. Individual and/or group conference on problems, progress and techniques in forensic science and research. May be repeated for credit when topic differs. (S/U grading only.)(F, W, S) Hopkins (change in existing course—eff. fall 14)

290G. Graduate Research Conference in Forensic Science
   Independent study—1 hour. Restricted to students enrolled in the M.S. in Forensic Science Program. Individual and/or group conference on problems, progress and techniques in forensic science and research. May be repeated for credit when topic differs. (S/U grading only.) F, W, S, Hopkins (change in existing course—eff. fall 14)

293C. Forensic Science Research Methodology (2)
   Lecture—1.5 hour; extensive writing or discussion—0.5 hours. Restricted to students enrolled in the Graduate Forensic Science program or by consent of the instructor. Introduction to identification, formulation, and solution of meaningful scientific problems encountered in the Forensic Science area including experimental design and/or theoretical analysis of new and prevailing techniques, theories and hypothesis.

French

New and changed courses in French (FRE)

Lower Division

25. Elementary French (5)
   Discussion—5 hours; laboratory—1 hour. Introduction to French grammar and development of all language skills in a cultural context with special emphasis on communication. Not open for credit to students who have taken course 1A; students who have successfully completed French 2 or 3 in the 10th or higher grade in high school may receive unit credit for this course on a P/NP grading basis only, although a passing grade will be charged to the student’s P/NP option, no petition is required; all other students will receive a letter grade unless a P/NP petition is filed. GE credit: Arthum | AH, WC, F, W, S, Su. (F, W, S, Su.) Webb (change in existing course—eff. fall 14)

3. Elementary French (5)
   Discussion—5 hours; laboratory—1 hour. Prerequisite: course 2. Continuation of course 1. Not open for credit to students who have taken course 1A. GE credit: Arthum | AH, WC, F, W, S, Su. (F, W, S, Su.) Webb (change in existing course—eff. winter 15)

215. Intermediate French (5)
   Lecture/discussion—4 hours; laboratory—1 hour. Prerequisite: course 1A, 3, or 3S. Review of grammar and vocabulary acquired in the elementary sequence, as well as the study of new grammatical structures and a continuing enrichment of vocabulary through oral work in class, written exercises, readings and compositions. Not open for credit to students who have completed course 21. GE credit: Arthum | AH, OL, WC, WE. F, F. Webb (change in existing course—eff. winter 15)

235. Intermediate French (5)
   Lecture/discussion—4 hours; laboratory—1 hour. Prerequisite: course 22 or 22S. Continuation of course 22 or 22S. Review of grammar and vocabulary, as well as, the study of new grammatical structures and a continuing enrichment of vocabulary. Not open for credit to students who have completed course 23. GE credit: Arthum | AH, OL, WC, WE. F, F. (change in existing course—eff. winter 15)
Upper Division

107A. Pre and Early Modern France (4)  Lecture—3 hours; term paper. Prerequisite: course 23. Introduction to pre and early modern French culture through a topical approach to topics such as the feudal system, the rise of the monarchy, the Reformation and religious wars. GE credit: ArtHum, Writ | AH, WC, WE — Goldstein, Simon [change in existing course—eff. spring 16]

107B. The Making of Modern France (4)  Lecture—3 hours; term paper. Prerequisite: course 23. Introduction to French culture through a historical approach to topics such as the absolute monarchy, the role of the parlements, the French revolution, and the political regimes of the nineteenth century. GE credit: ArtHum, Writ, Goldstein, Simon [change in existing course—eff. spring 16]

108. Modern French Culture (4)  Lecture—1 hour; intensive writing. Prerequisite: course 23. Survey of modern French culture from the Dreyfus affair to the present day. Topics may include French and women, deconstruction and modernization, education, social welfare and immigration. GE credit: WC, WE — Fort, Simon [change in existing course—eff. spring 16]

115. Medieval French Literature and Society (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Social and cultural life of medieval France as studied through its representations in such literary works as La Chanson de Roland, courtly love lyric, the Arthurian romances of Chrétien de Troyes, Aucassin et Nicolette, selected fabliaux and farces. GE credit: ArtHum | AH, WC, WE — Gwynn [change in existing course—eff. spring 16]

116. The French Renaissance (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Overview of major works and writers with particular attention to the historical context of the turbulent 16th century. Writers to be read may include Rabelais, Marot, Ronsard, Du Bellay, Labé, Marguerite de Navarre, Montaigne, and D’Aubigné. GE credit: ArtHum | AH, WC, WE — Goldstein, Simon [change in existing course—eff. spring 16]

117A. Baroque and Preclassicism (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Literature and intellectual culture of the period between the Renaissance and French classicism. GE credit: ArtHum | AH, WC, WE — Goldstein, Simon [change in existing course—eff. spring 16]

117B. The Classical Moment (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. History of the French romans from the Middle Ages to the Revolution with particular emphasis on the novels of the 18th century. GE credit: ArtHum | AH, WC, WE — Simon [change in existing course—eff. spring 16]

118B. Private Lives and Public Secrets: The Early French Novel (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. The history of the French roman from the Middle Ages to the Revolution with particular emphasis on the novels of the 18th century. GE credit: ArtHum | AH, WC, WE — Goldstein, Simon [change in existing course—eff. spring 16]

119A. The Romantic Imaginary (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Major concepts and themes of French Romanticism, such as dream and the supernatural, impossible love, exoticism, revolution, individualism, nature, the male and female, Romantic irony, the creative imagination, the cult of ruin. GE credit: ArtHum, Writ | AH, WC, WE — Fort, Simon [change in existing course—eff. spring 16] 119B. Realism, History and the Novel (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Narrative and historical codes of French realist fiction, with emphasis on the representation of history in the realist novel, its depiction of “realities” such as class and gender, and its relation to the historical situation of post-revolutionary society. GE credit: ArtHum, Writ | AH, WC, WE — Fort, Simon [change in existing course—eff. spring 16] 119C. From Baudelaire to Surrealism (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Study of the main poets and poetic movements from the mid-19th to the early 20th century, including Baudelaire, the Symbolists, and the Surrealists. GE credit: ArtHum | AH, WC, WE — Fort, Simon [change in existing course—eff. spring 16] 120. Modern French Thought (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Overview of post-World War II French intellectual currents from existentialism to structuralism and deconstruction. Readings will include Sartre and de Beauvoir, Camus, Lévi-Strauss, Lacan, Barthes, Foucault, Derrida, Kristeva, Sollers, Cixous, and Irigaray. Offered in alternate years. GE credit: ArtHum, Writ | AH, WC, WE — Fort, Simon [change in existing course—eff. spring 16] 121. Twentieth Century French Novel (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Novels and theories of the novel from Prost to the Nouveau Roman and beyond. Readings from among Cioran, Sartre, de Beauvoir, Camus, Breton, Beckett, Robbe-Grillet, Sartre, Simenon, Duras, Tournier, Perec, Modiano, Guibert, Toussaint. GE credit: ArtHum, Writ | AH, WC, WE — Fort, Warner [change in existing course—eff. spring 16] 122. French and Francophone Film (4)  Lecture/discussion—4 hours; extensive writing; fieldwork—3 hours. Prerequisite: course 100 or consent of instructor. French and Francophone film from the Lumière Brothers to the present. Topics may include analysis of film form and narrative, major filmmakers and filmic traditions, and film theory. May be repeated one time for credit when topic differs. Offered in alternate years. GE credit: ArtHum | AH, VL, WC, WE — Fort, Simon [change in existing course—eff. fall 14] 124. Post-Colonial and Francophone Literature (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 100. Post-independence Black African and/or Caribbean and/or North African literatures written in French. Selected topics include: identity and subjectivity, the role of the intellectual, women’s voices, languages and literatures, cultural syncretism, theories of post-colonialism. May be repeated one time for credit with approval of major adviser and instructor; when content differs; for example, students may take the course for repeat credit when the geographical focus (West Africa, North, African or Caribbean) or theme is substantially different from previous iterations. Offered in alternate years. GE credit: ArtHum, Div | AH, WC, WE — (S) Warner [new course—eff. fall 15] 128. Topics in French Culture (4)  Lecture—3 hours; extensive writing. Prerequisite: course 100 or consent of instructor. In-depth study of a particular topic in French culture. May include the Court of Louis XIV, the French Revolution and Immigration. May be repeated one time for credit when topic differs. Offered in alternate years. GE credit: WE — Constable, Guynn, Simon, Van Den Abbeele [change in existing course—eff. fall 14] 162. History of the French Language (4)  Lecture—3 hours; term paper. Prerequisite: course 100 or Linguistics 1. Main periods in development of the French language, from Latin to contemporary popular aspects, with emphasis on relationships between socio-cultural patterns and evolution of the language. Offered in alternate years. GE credit: ArtHum or SocSci | AH or SS, WC, WE — Webb [change in existing course—eff. spring 16] 200. Introduction to Graduate Study in French (2)  Seminar—2 hours. Prerequisite: graduate standing or consent of instructor. Introduction to a range of methodologies and critical practices in the field of French Studies, including literature, culture, and linguistics. Covers basic principles of bibliographic research in the humanities. (S/U grading only).—F. (F) [change in existing course—eff. spring 16] 201. History of French (4)  Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Presentation of the main changes in the grammatical structures of French, from Latin to contemporary usage, involving textual analysis and sociolinguistic description. —F. (F) Guynn, Russell Webb [change in existing course—eff. spring 16] 202. Topics in French Civilization (4)  Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Interdisciplinary approach to the study of French and Francophone civilization from the Middle Ages to the present. Course content will vary by instructor. May be repeated for credit when content differs. —F. (F) Simon [change in existing course—eff. spring 16] 204. Topics in Medieval Literature (4)  Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of Medieval French literature, focusing on a particular period, milieu, literary movement, genre, or theoretical approach. May be repeated for credit when topic differs. —F. (F) Guynn [change in existing course—eff. spring 16] 205A. Sixteenth-Century Literature: The Humanists (4)  Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. French humanism in its most varied forms. Although at different times Rabelais and Montaigne will be primarily studied, other leading intellectuals and religious writers will also receive attention. May be repeated for credit when different topic is studied. —F. (F) Guynn [change in existing course—eff. spring 16] 206A. Seventeenth-Century Literature: Theater (4)  Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. Works of Corneille, Racine, Moléire, and minor dramatists. One or more authors may be covered. May be repeated for credit with consent of instructor when different topics are studied. —W. (W) Guynn [change in existing course—eff. spring 16] 206B. Seventeenth-Century Literature: Prose (4)  Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Works of authors such as Pascal, Descartes, Mme de Lafayette. One or more authors may be covered. May be
repeated for credit with consent of instructor as different topics are studied from quarter to quarter.—F. F. [change in existing course—eff. spring 16]

206C. Seventeenth-Century Literature: Poetry (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of the works of one or more poets of the period. May be repeated for credit with consent of instructor.—S. (S.) [change in existing course—eff. spring 16]

207A. Eighteenth-Century Literature: Philosophies (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Not a course in philosophy, but an examination of the role of philosophy in the design and context of literary works. Study of one or more authors. May be repeated for credit.—W. (W.) Simon [change in existing course—eff. spring 16]

207B. Eighteenth-Century Literature: Novel (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several novelists of the period. Study of narrative experiments in the context of the philosophical climate and new literary values. Course may treat one or more novelists of the period. May be repeated for credit when different topics are studied.—S. (S.) Simon [change in existing course—eff. spring 16]

208A. Nineteenth-Century Literature: Fiction (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several novelists and/or short-story writers of the period. May be repeated for credit with consent of instructor when different topics are studied.—F. (F.) [change in existing course—eff. spring 16]

208B. Nineteenth-Century Literature: Poetry (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several poets of the period. May be repeated for credit with consent of instructor when different topics are studied.—S. (S.) [change in existing course—eff. spring 16]

209A. Twentieth-Century: Prose (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several writers of the period.—W. (W.) Fort [change in existing course—eff. spring 16]

209B. Twentieth-Century: Theater (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several dramatists of the period. May be repeated for credit with consent of instructor.—W. (W.) Fort [change in existing course—eff. spring 16]

209C. Twentieth-Century: Poetry (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of the works of one or several poets of the period. May be repeated for credit with consent of instructor.—S. (S.) [change in existing course—eff. spring 16]

210. Studies in Narrative Fiction (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor when different topic is studied.—F. (F.) [change in existing course—eff. spring 16]

211. Studies in Criticism (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor when different topic is studied.—W. (W.) [change in existing course—eff. spring 16]

212. Studies in the Theater (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor when different topic is studied.—F. (F.) [change in existing course—eff. spring 16]

213. Studies in Poetry (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor when different topic is studied.—W. (W.) [change in existing course—eff. spring 16]

214. Study of a Literary Movement (4)
Seminar—3 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor when different topic is studied.—S. (S.) [change in existing course—eff. winter 16]

215. Topics in French and Francophone Film (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Aspects of French and Francophone film from the Lumière Brothers through the present. Topics may include a specific historical period of filmmaking, film theories and the analysis of film form and narrative, and major filmmakers and filmic traditions. May be repeated two times for credit.—S. (S.) [change in existing course—eff. spring 16]

224. Francophone Literatures (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Study of cultural productions (literature, film, visual arts) by Francophone peoples such as found in North Africa, West Africa, the Caribbean, South East Asia, the Americas, and Metropolitan France. May be repeated for credit when topic differs and with consent of instructor.—Adjeunmobi [change in existing course—eff. spring 16]

250A. French Linguistics I (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Theoretical approach to the forms and functions of French, with emphasis on phonology and morphology. Overview of current linguistic theories and their application to French. Offered in alternate years.—W. (W.) Russell Webb [change in existing course—eff. spring 16]

250B. French Linguistics II (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Theoretical approach to the forms and functions of French, with emphasis on syntax and semantics. Overview of current linguistic theories and their application to French. Offered in alternate years.—W. (W.) Russell Webb [change in existing course—eff. spring 16]

251. Topics in the Linguistic Study of French (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Questions relevant to the linguistic study of French, such as language acquisition, sociolinguistics, and theoretical examination of structure. Intended for students in French linguistics and those applying linguistic models to literature or teaching. May be repeated for credit when topic differs.—S. (S.) Russell Webb [change in existing course—eff. spring 16]

291. Foreign Language Learning in the Classroom (4)
Seminar—3 hours; project. Prerequisite: graduate standing or consent of instructor. Overview of approaches to university-level foreign language instruction and the theoretical notions underlying current trends in classroom practices and commonly taught foreign languages. (Same course as German 291 and Spanish 291.)—F. W. (F. W.) [change in existing course—eff. spring 16]

297. Individual Study (1-5)
Prerequisite: graduate standing or consent of instructor. (S/U grading only.) [change in existing course—eff. spring 16]

298. Group Study (1-5)
Seminar—1-5 hours. Prerequisite: graduate standing or consent of instructor. May be repeated for credit with consent of instructor. [change in existing course—eff. spring 16]

299. Research (1-12)
Prerequisite: graduate standing or consent of instructor. (S/U grading only.) [change in existing course—eff. spring 16]

299D. Dissertation Research (1-12)
Prerequisite: graduate standing or consent of instructor. (S/U grading only.) [change in existing course—eff. spring 16]

Genetics
(A Graduate Group)

New and changed courses in Genetics (A Graduate Group) (GGG)

Graduate

2018. Genomics (5)
Lecture—3 hours; discussion—2 hours. Prerequisite: course 201A, course 201C or equivalents that provide a basic understanding of genetics and molecular biology. Class limited to 40 students; priority to Genetics Graduate Group students. Prokaryotic and eukaryotic genomes. Experiments, technologies and analytical challenges of modern genomics research and the theory and mechanics of data analysis. Structural, functional, and comparative genetics. Related issues in biotechnology.—F. (F.) [change in existing course—eff. winter 15]

211. Concepts in Human Genetics and Genomics (3)
Lecture/discussion—3 hours. Prerequisite: course 201A or the equivalent; course 201B, 201C or the equivalent recommended. Pass One restricted to graduate students enrolled in the Human Genetics Focus Group; Pass Two restricted to graduate students enrolled in Genetics Graduate Group; after that, open enrollment for graduate students up to 12 students, then undergraduates. Human genomic organization; genetic structure of populations; positional cloning; application of linkage, association, and haplotypes; quantitative trait loci analyses; integrative genetic studies of gene expression; DNA repair mechanisms in genetic disease; mutation analyses; epigenetics; mitochondrial disease; gene manipulation and therapy.—W. (W.) Russell Webb [change in existing course—eff. winter 15]

225. Gene Therapy (3)
Lecture/discussion—3 hours. Prerequisite: Genetics 201C, Molecular and Cellular Biology 214, or equivalent. Gene therapy from basic concepts to clinical applications. Topics include the human genome and genetic variation, genetic diseases, methods to manipulate gene expression, viral and...
non-viral delivery vectors, history and progress of gene therapy, case studies, and ethical issues. [Same course as Pharmacology & Toxicology 225—S. J. Anderson (new course—eff. fall 14)]

250. Functional Genomics: From Bench to Bedside (3)
Lecture/discussion—3 hours. Prerequisite: course 201C, Molecular and Cellular Biology 214, or equivalent. Functional genomics (how genetic variation and epigenetics affect gene expression), with an emphasis on clinical relevance and applications. Topics include genetic variation and human disease, cancer genomics, and biomarker discovery. [Same course as Pharmacology & Toxicology 250—S. J. Diaz, LeSalle, Segal (new course—eff. spring 15)]

290. Seminar in Evolutionary, Developmental and Population Genetics (1)
Seminar—1 hour. Topics of current interest in evolutionary, population, and developmental genetics. May be repeated for credit. [S/U grading only.] Offered in alternate years.—S. (S.) Hjimans (change in existing course—eff. winter 15)

210. Topics in Biogeography (3)
Lecture—2 hours; discussion—1 hour. Prerequisite: Evolution and Ecology 147 or Wildlife, Fish, and Conservation Biology 156 (may be taken concurrently) or equivalent. Consent of instructor required for undergraduates. Current topics in historical and ecological biogeography, including macroecology and areography, GIS and remote sensing, phylegeography, vegetation, plant and animal community and species geography. Systematics, climate change, and conservation will be addressed. Offered in alternate years.—Shapiro (change in existing course—eff. winter 15)

211. Physical Geography Traditions and Methods (3)
Lecture/discussion—2 hours; term paper. Prerequisite: introductory course in physical geography. Graduate-level standing in geography or related discipline. Discussion of the physical science tradition in geography, including key concepts and current research in climatology, geomorphology, soils geography, biogeography, climate change, watershed science, and coastal studies. Research paradigms, programs, and methods, as used by physical geographers will be discussed. May be repeated three times for credit. Offered in alternate years.—F. (change in existing course—eff. winter 15)

215. Ecologies of Infrastructure (4)
Seminar—4 hours. Open to graduate standing or consent of instructor. Focus on design practices and theory associated with ecological conceptions of infrastructure, including networked infrastructure region, bioregion, regionalization, ecological engineering, reconciliation ecology, novel ecosystems, and theory/articulation of landscape change. Offered in alternate years. [Same course as Landscape Architecture 215—Milligan (new course—eff. winter 16)]

233. Urban Planning and Design (4)
Lecture—2 hours; discussion—2 hours. Limited to graduate students. Regulation, design, and development of the built landscape, planning and land development processes, zoning and subdivision regulation, site planning, urban design goals and methods, public participation strategies, creatively designing landscapes to meet community and ecological goals. [Same course as Landscape Architecture 205—Wheeler (change in existing course—eff. winter 16)]

240. Geophysics of the Earth (3)
Lecture—3 hours. Prerequisite: Earth Sciences and Resources 201, Physics 98, Mathematics 22B. Physics of the earth’s crust, mantle, and core. Laplace’s equation and spherical harmonic expression of gravity and magnetic fields. Elastic wave equation in geologic media. Body and surface seismic waves. Equations of state, thermal structure of the earth. Offered in alternate years.—S. (S.) Kligy (change in existing course—eff. fall 15)

241. The Economics of Community Development (4)
Seminar—4 hours. Prerequisite: graduate standing. Economic theories and methods of planning for communities. Human resources, community services and infrastructure, industrialization and technological change, and regional growth. The community’s role in the greater economy. [Same course as Community and Regional Development 241—F. F. Kenney (new course—eff. spring 15)]

260. Global Political Ecology (4)
Seminar—3 hours; term paper or discussion—1 hour. Open to graduate students only or consent of instructor. Background, genesis, current debates in political ecology. Examination of political-economic and social-cultural causes of environmental change. Introduction to development theory, globalization, history of science and power/knowledge. Case of social movements, justice, resistance, gender, race and class. Focus outside North America. Offered in alternate years.—F. S. Davis (new course—eff. fall 14)

280. Field Studies in Geography (3)
Lecture—1 hour; fieldwork—6 hours. Prerequisite: undergraduate or consent of instructor. Fieldwork in geography; consent of instructor required. Limited to 20 students. A topic or subdiscipline of geography will form the theme for the course in any given offering, with a focus on current research on this topic, field methodologies, and data analysis in human and physical geography. May be repeated twice for credit. (change in existing course—eff. winter 15)

290. Seminar in Geography (1-3)
Seminar—1-3 hours. Prerequisite: graduate standing or consent of instructor. Seminar focuses on specified topical areas within geography, which will vary quarter to quarter. Students expected to present on oral seminar on an aspect of the general topic under discussion. May be repeated six times for credit. [S/U grading only.—F. W. S. (F. W. S.) (change in existing course—eff. winter 15)]

Geology

New and changed courses in Geology (GEL)

Lower Division

166. The Oceans: Discussion (2)
Discussion/laboratory—2 hours; term paper or discussion. Prerequisite: consent of instructor. Scientific method applied to discovery of the processes, biota and history of the oceans. Group discussion and preparation of term paper. Not open for credit to students who have taken course 116G. GE credit: SciEng | SE, SL, WE—W. (W.) Hill (change in existing course—eff. winter 15)

18V. Energy and the Environment (3)
Web virtual lecture—1.5 hours; web electronic discussion—1.5 hours. Conventional and alternative energy resources and their environmental impacts. Basic principles, historical development, current advantages and disadvantages, future prospects. Oil, natural gas, coal, nuclear, wind, geothermal, water, tidal, solar, hydrogen, and other sources of energy for the 21st century. GE credit: SciEng | SE, SL, WE—W. (W.) Verosub (new course—eff. winter 15)

25V. Geology of National Parks (3)
Web virtual lecture—1 hour; web electronic discussion—2 hours. Appreciation of the geologic framework underlying the inherent beauty of U.S. National Parks. Relationship of individual parks to geologic processes such as mountain building, volcanism, stream erosion, glacial action and landscape evolution. No credit for students who have completed course 25. GE credit: SciEng | SE—W. S. (W. S. & C. S. Gee (UC San Diego), Osleger (UC Davis), Schwarz (UC Santa Cruz) (new course—eff. spring 15)

81. Learning in Science and Mathematics (2)
Lecture/discussion—2 hours; fieldwork—2 hours. Limited to 26 students per section. Exploration of how students learn and develop understanding of science and mathematics classrooms. Introduction to case studies and interview techniques and their use in K-6 classrooms to illuminate factors that affect student learning. (Same course as Education 81) JK, NF (change in existing course—eff. winter 15)

Upper Division

101. Structural Geology (3)
Lecture—3 hours. Prerequisite: courses 50 and 50L, Physics 7A or 9A, Mathematics 168 or 218, or consent of instructor. Class size limited to 35 students. Study of processes and products of rock deformation. Introduction to structural geology through a survey of the features and geometries of faults and folds, techniques of strain analysis, and continuum mechanics of rock deformation. GE credit: SciEng | SE—W. (W.) Cowgill, Osing (change in existing course—eff. winter 15)

136. Ecogeomorphology of Rivers and Streams (5)
Lecture—1 hour; discussion/laboratory—2 hours; fieldwork; term paper or discussion. Prerequisite: upper division or graduate standing in any physical science, biological science, or engineering, and consent of instructor. Restricted to advanced students in the physical sciences, biological sciences, or engineering. Integrative multidisciplinary field analysis of streams. Class project examines hydrology, geomorphology, water quality and aquatic and riparian ecology of degraded and pristine stream systems. Includes cooperative two-week field survey in remote streams. Class project examines hydrology, geomorphology, water quality and aquatic and riparian ecology of degraded and pristine stream systems. Includes cooperative two-week field survey in remote streams.
2. Elementary German (5) Discussion—5 hours; laboratory—1 hour. Prerequisite: course 1. Not open to credit to students who have taken course 1A. Course of 1A. Continuation of course 1 in areas of grammar and basic language skills. GE credit: ArtHum | AH, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. winter 15)

3. Elementary German (5) Discussion—5 hours; laboratory—1 hour. Prerequisite: course 1. Not open to credit to students who have taken course 1A. Course of 1A. Continuation of course 1 in areas of grammar and basic language skills. GE credit: ArtHum | AH, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. fall 14)

194B. Senior Thesis (3) Prerequisite: open to Geology majors who have completed 135 units and who do not qualify for the honors program. Guided independent study of a selected topic, leading to the writing of a senior thesis. (Deferred grading only, pending completion of course sequence.) GE credit: SciEng | SE, WE, F, W, S. F. W. (F, W, S).

(change in existing course—eff. summer 15)

194A. Senior Honors Thesis (3) Independent study—9 hours. Prerequisite: open to Geology majors who have completed 135 units and who qualify for the honors program. Guided independent study of a selected topic, leading to the writing of a senior thesis. (Deferred grading only, pending completion of course sequence.) GE credit: SciEng | SE, WE, F, W, S. F. W. (F, W, S).

(change in existing course—eff. summer 15)

194H. Senior Honors Project (3) Independent study—9 hours. Prerequisite: open to Geology majors who have completed 135 units and who qualify for the honors program. Guided independent study of a selected topic, leading to the writing of an honors thesis. (Deferred grading only, pending completion of course sequence.) GE credit: SciEng | SE, WE, F, W, S. F. W. (F, W, S).

(change in existing course—eff. summer 15)

Graduate

298. Group Study (1-5) Prerequisite: graduate standing or consent of instructor. May be repeated up to 10 units for credit. (S/U grading only)

(change in existing course—eff. spring 15)

German

New and changed courses in German (GER)

Lower Division

1. Elementary German (5) Discussion—5 hours; laboratory—1 hour. Not open to students who have taken course 1A. Introduction to German grammar and development of all language skills in a cultural context with special emphasis on communication. Students who have successfully completed German 2 or 3 in the 10th or higher grade in high school may receive unit credit for this course on a P/NP grading basis only. Although a passing grade will be charged to the student's P/NP option, no requirement is set. Other students will receive a letter grade unless a P/NP petition is filed. GE credit: ArtHum | AH, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. winter 15)

2. Elementary German (5) Discussion—5 hours; laboratory—1 hour. Prerequisite: course 1. Not open to credit to students who have taken course 1A. Course of 1A. Continuation of course 1 in areas of grammar and basic language skills. GE credit: ArtHum | AH, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. winter 15)

101A. Survey of German Literature, 800-1800 (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. German literature from the Middle Ages to Classicism (800-1800) with an overview of major movements and authors. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

103. Writing Skills in German (4) Lecture—3 hours; extensive writing—1 hour. Prerequisite: course 22. Practice in different kinds of writing, such as abstracts, correspondence, lecture summaries, analysis of or response to short literary texts. GE credit: ArtHum | AH, OL, WC, WE, F. W. (F, W, S).

(change in existing course—eff. winter 16)

104. Translation (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. Exercises in German-to-English, English-to-German translation using texts from the areas of culture and commerce. Not open for credit to students who have completed course 104A. Offered irregularly. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

105. The Modern German Language (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. Introduction to the linguistic analysis of contemporary German, including its phonology, morphology, syntax and semantics, as well as sociolinguistic considerations. Offered irregularly. GE credit: ArtHum, Wrt | AH, OL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

114. From Marlene Dietrich to Run, Lola Run: German Women and Film (4) Lecture/discussion—3 hours; extensive writing; film viewing—3 hours. Knowledge of German not required. Women in German film from the Weimar Republic to present, with an emphasis on conceptualizations of gender, historical and political context, aesthetic and filmic innovations. GE credit: ArtHum, Wrt | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

120. Survey of German Culture (4) Lecture—3 hours; discussion—1 hour. Prerequisite: course 22 or consent of instructor. Major developments in German arts, philosophical thought, social institutions, and political history. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

121. The Medieval Period in German Literature (4) Discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. Major developments in German arts, philosophical thought, social institutions, and political history. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

125. Short Fiction: 1880-1914 (4) Lecture—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Major developments in German arts, philosophical thought, social institutions, and political history. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

126. Modern German Literature (4) Discussion—3 hours; extensive writing. Prerequisite: course 22. Selections from significant works of major contemporary writers, such as Hesse, Mann, Kafka, Rilke, Brecht, Grass. May be repeated one time for credit with consent of adviser. Offered irregularly. GE credit: ArtHum | AH, OL, VL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)

127. Major Writers in German (4) Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. Examination of representative works by a major writer; set in the broader cultural context of the relevant period or movement. May be repeated one time for credit when topic differs. Offered irregularly. GE credit: ArtHum | AH, OL, WC, WE, F. W. (F, W, S). Arnett

(change in existing course—eff. spring 16)
129. Postwar Women Writers (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22 or consent of instructor. Major writers in both Germanies, Austria, and Switzerland since 1945. Topics include the concept of a feminist aesthetics, East vs. West German writers, and the status of minority women writers in Germany (Jewish, Turkish-German, Afro-German). Offered irregularly. GE credit: ArtHum | AH, WC, WE.

132. The German Novelle (4)
Lecture—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Readings in the works of Germany's leading dramatists from the eighteenth century to the present day, such as Lessing, Goethe, Schiller, Kleist, Büchner, Hauptmann, Brecht. Offered irregularly. GE credit: ArtHum | AH, OL, VL, WC, WE. —Krimmer

[change in existing course—eff. spring 16]

133. The German Drama (4)
Lecture—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Topics in German intellectual history with materials from a number of periods, genres, and disciplines. May be repeated twice for credit when topic differs. Offered irregularly. GE credit: ArtHum | AH, WC, WE.

[change in existing course—eff. spring 16]

134. Topics in German Intellectual History (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Topics in German intellectual history with materials from a number of periods, genres, and disciplines. May be repeated twice for credit when topic differs. Offered irregularly. GE credit: ArtHum | AH, WC, WE.

[change in existing course—eff. spring 16]

143. Language Through Media (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Study of contemporary German-language news media (press, video, film, CD-ROM, internet) for insight into political and cultural developments in the German-speaking countries. Offered irregularly. GE credit: ArtHum | AH, OL, VL, WC, WE. —Annett

[change in existing course—eff. spring 16]

168. Multiculturalism in German Literature (4)
Lecture/discussion—3 hours; term paper or discussion—1 hour. Prerequisite: course 22 or consent of instructor. Notable literary repercussions of the zenith of Germany's international status at the time of Bismarck's Chancellorship. The poetry of Storm, the prose of Fontane, the drama of Hauptmann. Offered irregularly. GE credit: ArtHum | AH, WC, WE.

[change in existing course—eff. spring 16]

185. The Age of Bismarck (4)
Discussion—3 hours; term paper. Prerequisite: course 22 or consent of instructor. Notable literary repercussions of the zenith of Germany's international status at the time of Bismarck's Chancellorship. The poetry of Storm, the prose of Fontane, the drama of Hauptmann. Offered irregularly. GE credit: ArtHum | AH, WC, WE. —Annett

[change in existing course—eff. spring 16]

194HB. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

194TH. Honors Program (3)
Independent study—2 hours; term paper. Prerequisite: open only to majors with a 3.500 minimum GPA in at least 135 graduation units. Writing of Honors Thesis on topic selected by student in consultation with thesis advisor. [P/NP grading only. Deferred grading only, pending completion of course sequence.]

[change in existing course—eff. summer 15]

202. Middle High German (4)
Discussion—3 hours; lecture—1 hour. Prerequisite: graduate standing. Outline of grammar; selections from Middle High German epic, romance, and lyric poetry.

[change in existing course—eff. spring 16]

210. Techniques of Literary Scholarship (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Theoretical, methodological, and methodological tools and resources for advanced, independent research. Offered irregularly.

[change in existing course—eff. spring 16]

211. Concepts in Literary Theory (4)
Seminar—3 hours. Prerequisite: graduate standing. Advanced course in concepts of literary theory and criticism. Discussion of the theoretical concepts and their impact on the understanding and appreciation of literary works. Discussion in German and English, readings in German. Offered irregularly.

[change in existing course—eff. spring 16]

212. Contemporary Approaches to Literary Theory (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Study of contemporary theoretical approaches such as structuralism, deconstruction, feminism, Marxism/Frankfurt School, and reception theory in conjunction with the works of major authors. Offered irregularly. —Finney

[change in existing course—eff. spring 16]

239. Narrative and Narrative Theory (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Studies in a theoretical and literary historical context, major elements of 19th- and 20th-century narrative, such as techniques of framing, refraction, and montage; narrative perspective; mimesis; and self-consciousness. Focuses on paradigmatic prose texts along a spectrum of critical approaches. —Finney

[change in existing course—eff. spring 16]

240. Forms of German Verse (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Development of the German verse from the Middle Ages to the present, with special emphasis on different techniques of text analysis and interpretation. May be repeated for credit with consent of instructor. Offered irregularly.

[change in existing course—eff. spring 16]

241. The German Drama (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. The major forms of German drama from its origins to the middle of the twentieth century. May be repeated for credit with consent of instructor. Offered irregularly. —Finney

[change in existing course—eff. spring 16]

242. The German Novelle (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. The major German Novellisten, with particular emphasis on the flowering of this genre in the nineteenth century. May be repeated for credit with consent of instructor. Offered irregularly.

[change in existing course—eff. spring 16]

243. Fontaine and the Rise of the Modern German Novel (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Fontaine, the father of the modern German novel and the chief German representative of the European novel at its greatest, in the context of the nineteenth-century European political and social scene. Offered irregularly.

[change in existing course—eff. spring 16]

244. Gender and Comedy (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Studies of genre and gender in German-language comedy by male and female writers from the 18th century to the present. Authors to be included are Lessing, Kleist, Büchner, Ebner-Eschenbach, Hauptmann, Holmannshol, Frisch, Langner, and Jelinek. Offered irregularly. —Finney

[change in existing course—eff. spring 16]

252. The Writings of Lessing (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Study of Lessing's theory of literature with particular emphasis upon his critical attacks on French drama. Offered irregularly.

[change in existing course—eff. spring 16]

253. Goethe (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. The Study of the origins of Goethe's thought in German Pietism, and his principal artistic, autobiographical, scientific, and philosophical works. Offered irregularly. —Krimmer

[change in existing course—eff. spring 16]

254. Schiller (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. A critical analysis of Schiller's major works and his impact on the intellectual climate in Germany during the late eighteenth and early nineteenth centuries. Offered irregularly. —Krimmer

[change in existing course—eff. spring 16]

257. Heinrich von Kleist (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Kleist's important dramatic and prose works; special attention will be given to the peculiar hermetic problems in modern German, French, and Anglo-American Kleist criticism. Offered irregularly. —Krimmer

[change in existing course—eff. spring 16]

258. The Novels of Thomas Mann (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Reading of selected novels with emphasis on aesthetic techniques, originality, ethical and political views, and influence on the contemporary literary scene in Germany. Offered irregularly.

[change in existing course—eff. spring 16]

259. Studies in Kafka (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Study of Kafka's narrative techniques with special emphasis in the shorter works on the existential development from its roots in Expressionism. Offered irregularly. —Rose

[change in existing course—eff. spring 16]

260. The Poetry of Rilke (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. Study of the principal motifs, myths, images, and problems in the poetry of Rainer Maria Rilke. Offered irregularly.

[change in existing course—eff. spring 16]

261. Brecht and the Epic Theater (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. A reading of Brecht's works with emphasis on the ideas which impelled the development of new literary forms and concepts. —S. (S.) Fisher

[change in existing course—eff. spring 16]
103. The Microbiome of People, Animals, and Plants (3)
Lecture—3 hours. Prerequisite: Biological Science 2A, 2B, 2C. Examination of the structure and function of microbial communities that live inside and on host organisms. Introduction to general concepts of the microbiome and microbiota, and their relationships to host health and disease. GE credit: SciEng | SE, SL—F, F, F (J.) Cook, Leveau
(new course—eff. fall 15)

187. Global Disease Biology Seminar (3)
Seminar—1 hour; discussion—1 hour; term paper. Prerequisite: course 90, Science and Society 13. Open to junior standing. Global Disease Biology majors. Seminar leading to development of the research proposal and academic plan for the Global Disease Biology major. —F, F (new course—eff. fall 15)

189. Global Disease Biology Senior Research (3)
Independent study—3 hours. Prerequisites: courses 90, 189D, (course 189D concurrently the first time course 189 is taken), Science and Society 13. Restricted to senior standing. Global Disease Biology majors only. Captures research experience for the Global Disease Biology major. Project may be experimental, library research, or some other creative activity. May be repeated one time for credit for student research conducted over two quarters; second quarter used to finish writing the research paper. (P/NP grading only.)—F, W, S, Su. (F, W, S, Su.)
(new course—eff. fall 15)

189D. Global Disease Biology Research Discussion (1)
Discussion—1 hour. Prerequisites: courses 90, 187, Science and Society 13; course 189 required concurrently. Restricted to junior standing. Global Disease Biology majors only. Course helps prevent or solve problems during the students’ research activity. Independent advising and assistance on research proposal. (P/NP grading only.)—F, W, S, F, F, S, Su.
(new course—eff. fall 15)

Greek
New and changed courses in Greek (GRK)
Lower Division
2. Elementary Greek (5)
Lecture—5 hours. Prerequisite: course 1 or the equivalent. Continuation of course 1. GE credit: ArtHum | AH—W, W. (F.) Popescu (change in existing course—eff. spring 16)

2NT. Elementary New Testament Greek (1)
Lecture—1 hour. Prerequisite: course 2 (required concurrently) or consent of instructor. Supplementary study of New Testament Greek. GE credit: ArtHum | AH—W, W. (F.) Popescu (change in existing course—eff. spring 16)

3. Intermediate Greek (5)
Lecture—5 hours. Prerequisite: course 2 or the equivalent. Continuation of course 2. Selected readings from Greek authors. GE credit: ArtHum | AH—S, S. (J.) Popescu (change in existing course—eff. spring 16)

3NT. Elementary New Testament Greek (1)
Lecture—1 hour. Prerequisite: course 3 (required concurrently) or consent of instructor. Supplementary study of New Testament Greek. GE credit: ArtHum | AH—S, S. (J.) Popescu (change in existing course—eff. spring 16)

Upper Division
100. Readings in Greek Prose (4)
Lecture/discussion—4 hours. Prerequisite: course 3 or equivalent. Review of Greek morphology, syntax, and vocabulary. Readings in Greek prose authors, including Xenophon. GE credit: ArtHum | AH—F, F (Rundin, Seal (change in existing course—eff. spring 15)

101. Plato (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArtHum, Wrt | AH, WE—F, F (change in existing course—eff. fall 16)

102. Euripides (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArtHum, Wrt | AH, WE—F, W, S. (F, W, S, S.) Popescu (change in existing course—eff. spring 16)

103A. Homer: Iliad (4)
Recitation—3 hours; term paper. Prerequisite: course 3. GE credit: ArtHum, Wrt | AH, WE—Breilinski (change in existing course—eff. spring 15)

103B. Homer: Odyssey (4)
Recitation—3 hours; term paper. Prerequisite: course 3. GE credit: ArtHum, Wrt | AH, WE—Popescu (change in existing course—eff. spring 15)

104. Menander (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArtHum, Wrt | AH, WE—F, W, S. (F, W, S, S.) Seal (change in existing course—eff. spring 16)

105. Attic Orators (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Selected readings from the orators of 4th and 5th century Athens. May be repeated for credit if topic differs and with consent of instructor. GE credit: ArtHum | AH, WE, WE—F, W, S, F, W, S, S. Seal (change in existing course—eff. spring 16)

110. Readings in the Greek Novel (4)
Lecture—3 hours; term paper. Prerequisite: course 100. Selected readings from Greek prose fiction of the late classical, Hellenistic and imperial periods. Offered in alternate years. May be repeated two times for credit with consent of instructor. GE credit: ArtHum, Wrt | AH, WE, WE—Ullig (change in existing course—eff. spring 15)

111. Sophocles (4)
Lecture—3 hours; term paper. Prerequisite: course 103. GE credit: ArtHum, Wrt | AH, WE— (change in existing course—eff. spring 15)

112. Aristophanes (4)
Lecture—3 hours; term paper. Prerequisite: course 103. GE credit: ArtHum, Wrt | AH, WE, WE—Popescu, Seal (change in existing course—eff. spring 15)

114. Lyric Poetry (4)
Lecture—3 hours; term paper. Prerequisite: course 103. GE credit: ArtHum, Wrt | AH, WE, WE—F, W, S. (F, W, S, S.) Popescu (change in existing course—eff. spring 16)
115. Aeschylus (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Offered in alternate years. GE credit: ArtHum | AH, WE.—F, W, S. [F, W, S.]
(change in existing course—eff. spring 16)

116. Herodotus (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Translation and discussion of selected readings from Hellenistic to Byzantine Greek literature. Offered in alternate years. GE credit: ArtHum | AH, WE.—F, W, S. [F, W, S.]
(change in existing course—eff. spring 16)

121. Greek Prose Composition (4)
Lecture—3 hours; discussion—4 hours. Prerequisite: course 100 or consent of instructor. Intensive grammar and vocabulary review through exercises in Greek prose composition. Offered in alternate years. GE credit: ArtHum | AH.—F, W, S. [F, W, S.]
(change in existing course—eff. spring 16)

130. Readings in Later Greek (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 100 or consent of instructor. Translation and discussion of selected readings from Hellenistic to Byzantine Greek literature. Offered in alternate years. GE credit: ArtHum | AH, WE.—F, W, S. [F, W, S.]
(change in existing course—eff. spring 16)

198. Directed Group Study (1-5)
Prerequisite: consent of instructor. (P/NP grading only.)
(change in existing course—eff. winter 15)

199. Special Study for Advanced Undergraduates (1-5)
Prerequisite: consent of instructor. (P/NP grading only.)
(change in existing course—eff. winter 15)

Health Informatics

New and changed courses in Health Informatics (MHI)
Graduate

289A. Special Topics in Medical Informatics; Data Acquisition (1-5)
Lecture; laboratory. Prerequisite: consent of instructor. Special topics in Data Acquisition. May be repeated for credit when topics differ.—F, W, S. [F, W, S.]
(change in existing course—eff. summer 15)

289B. Special Topics in Health Informatics; Seminars in Clinical Translational Informatics (1-5)
Seminar—1 hour. Seminars in current clinical translational informatics research topics. Guest presenters and faculty led discussion.—F, W, S. [F, W, S.]
Anderson, Nicholas
(change in existing course—eff. summer 15)

289F. Database and Knowledge Management (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Class size limited to 20 students. Course objectives include understanding the informatics techniques for data capture, information management, and knowledge generation that a student will use throughout their career. May be repeated for credit.—F, W, S. [F, W, S.]
Lynch
(change in existing course—eff. winter 15)

289G. Special Topics in Health Informatics; Biostatistics (1-5)
Lecture—3 hours; laboratory—3 hours. Prerequisite: consent of instructor. Special topics in Biostatistics. Evaluation Methods and Statistics in Biomedical Informatics. Research design and analysis with special emphasis on Biomedical Informatics.—F, S. [F, S.]
(Odd)
(change in existing course—eff. spring 15)

100BN. Advanced Modern Hebrew II (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 100A or consent of instructor. Students who have taken course 100B as 2nd year Hebrew may take course 100BN. Third year Hebrew. Advanced grammar and composition. Focus on reading of literary texts, oral skills and accuracy in writing. GE credit: ArtHum | AH.
(change in existing course—eff. spring 15)

100CN. Advanced Modern Hebrew III (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 100B. Students who have taken course 100C as 2nd year Hebrew may take course 100CN. Third year Hebrew. Advanced grammar and composition. Focus on reading of literary texts, oral skills and accuracy in writing. GE credit: ArtHum | AH.
(change in existing course—eff. spring 15)

Hindi

New and changed courses in Hindi (HIN)
Lower Division

1A. Accelerated Intensive Elementary Hindi (15)
Lecture/discussion—5 hours. Introduction to Devanagari Script through development of all language skills in a cultural context with emphasis on communicative proficiency. GE credit: ArtHum | AH, WC.—F. (Chauhan)
(change in existing course—eff. fall 11)

2. Elementary Hindi/Urdu I (5)
Lecture/discussion—5 hours. Prerequisite: course 1. Continuation of course 1. Development of all language skills in a cultural context with emphasis on communicative proficiency. GE credit: ArtHum | AH, WC.—F. (Chauhan)
(change in existing course—eff. winter 15)

3. Elementary Hindi/Urdu III (5)
Lecture/discussion—5 hours. Prerequisite: course 2. Introduction to Devanagari Script through development of all language skills in a cultural context with emphasis on communicative proficiency. GE credit: ArtHum | AH, WC.—F. (Chauhan)
(change in existing course—eff. spring 15)

History

New and changed courses in History (HIS)
Lower Division

48. History of Western Civilization (4)
Lecture—3 hours; discussion—1 hour. History of western civilization from the Renaissance to the Eighteenth Century. GE credit: ArtHum or SocSci, Wrt | AH or SS, VL, WC, WE.—S. (S. Stuart)
(change in existing course—eff. winter 15)
12. Food and History (4)
Lecture—3 hours; discussion—1 hour. Survey of the ways in which people have fed themselves from the dawn of humanity to the present. Transformation of plants and animals into food, cooking into cuisine, and ceremony into etiquette. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, VL, WC, WE.—McKee, Resendez. (change in existing course—eff. fall 14)

72A. Women and Gender in America, to 1865 (4)
Lecture—3 hours; discussion—1 hour. History of women and gender in America through 1865, emphasizing intersections of gender, race, class, and sexuality. Topics include intermarriage, slavery, witchcraft, meanings of motherhood, war, domestic labor, marital reform, women's rights, migrations, the effects of commercialization and industrialization. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, VL, WC, WE.—W. (W) Hartigan-O’Connor. (change in existing course—eff. fall 14)

72B. Women and Gender in America, 1865-Present (4)
Lecture—3 hours; discussion—1 hour. History of women and gender in America since 1865, emphasizing intersections of gender, race, class, and sexuality. Covers emancipation, migration, immigration, war, transitions in same-sex and opposite-sex relationships, and the birth control, suffrage, labor, civil rights, feminism, and anti-feminist movements. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, VL, WC, WE.—O’Toole. (change in existing course—eff. fall 14)

50. The History of the United States in the Middle East (2)
Lecture/discussion—2 hours. History of the United States in the Middle East from 1900 to the present. Examination of U.S. foreign relations toward the Middle East, their regional ramifications and domestic repercussions. GE credit: ArtHum or SocSci | ACGH, AH or SS, WC, WE.—E. Oya. (new course—eff. spring 15)

Seminar—4 hours, term paper. Limited enrollment. History of the attitudes and behavior of Americans toward their natural environment and their technological environment, from colonial times to the present. No final examination. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS, WE.—F. Minton. (change in existing course—eff. spring 16)

Upper Division

101. Introduction to Historical Thought and Writing (5)
Lecture/discussion—4 hours; term paper. Prerequisites: upper division standing recommended. Study of the history of historical thought and writing, analysis of critical and speculative philosophies of history and evaluation of modes of organization, interpretation, and style in historical writing. Offered in alternate years. GE credit: WE. (change in existing course—eff. spring 16)

102A. Undergraduate Proseminar in History; Ancient (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Ancient. May be repeated for credit. (change in existing course—eff. summer 15)

102B. Undergraduate Proseminar in History; Medieval (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Medieval. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102C. Undergraduate Proseminar in History (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Europe since 1815. May be repeated for credit. (change in existing course—eff. summer 15)

102D. Undergraduate Proseminar in History; Modern Europe to 1815 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Modern Europe to 1815. May be repeated for credit. (change in existing course—eff. summer 15)

102E. Undergraduate Proseminar in History; Europe since 1815 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Europe since 1815. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102F. Undergraduate Proseminar in History; Russia (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Russia. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102G. Undergraduate Proseminar in History (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Latin America since 1800. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102H. Undergraduate Proseminar in History; China Since 1800 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. China since 1800. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102I. Undergraduate Proseminar in History; Britain (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Britain. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102J. Undergraduate Proseminar in History; Latin America Since 1810 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Latin America since 1810. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102K. Undergraduate Proseminar in History; American History to 1787 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. American History to 1787. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102L. Undergraduate Proseminar in History; United States, 1787-1896 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. United States, 1787-1896. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102M. Undergraduate Proseminar in History; United States Since 1896 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. United States since 1896. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102N. Undergraduate Proseminar in History; Japan (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Japan. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102O. Undergraduate Proseminar in History; Africa (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Africa. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102P. Undergraduate Proseminar in History; Christianity and Culture in Europe, 50-1850 (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Christianity and Culture in Europe, 50-1850. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102Q. Undergraduate Proseminar in History; India (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. India. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102R. Undergraduate Proseminar in History; Muslim Societies (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Muslim Societies. May be repeated for credit. Offered in alternate years. (change in existing course—eff. summer 15)

102S. Undergraduate Proseminar in History; Education Abroad Program (5)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Education Abroad Program. May be repeated for credit. Offered in alternate years. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE. (change in existing course—eff. summer 15)
102X. Undergraduate Proseminar in History (4)
Seminar—3 hours; term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Comparative History selected for study is Medieval Europe, the Cape (southern Africa), the Americas, and the world. The focus is on significant historical developments rather than on narrative history. GE credit: ArtHum or SocSci | ACGH, AH or SS, WC, WE—Olmsted (new course—fall 14)

105. Teaching History (4)
Lecture—3 hours; term paper. Teaching of American and world history at the K-12 level. Emphasis on introducing college students to the multiple ways in which history is taught, and on understanding how history education is determined. GE credit: ArtHum or SocSci | ACGH, AH or SS, WC, WE—Olmsted (change in existing course—eff. summer 15)

112C. History of Jews in the Muslim World (4)
Lecture—3 hours; term paper. History of Jewish communities in the lands of Islam from the time of the Prophet Muhammad to the present day. GE credit: SocSci | SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

115F. History of Modern North Africa, 1800 to the Present (4)
Lecture—3 hours; term paper. History of Morocco, Algeria, Tunisia and Libya (the Maghrib), 1800 to the present. Topics include conquest and pacification, reform movements, the rise of nationalism, decolonization, state capitalism, economic liberalization, Islamism, democratization and human rights, the interplay of history and memory. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WE—Olmsted (change in existing course—eff. fall 11)

116. African History: Special Themes (4)
Lecture—3 hours; term paper. Prerequisite: course 15 recommended. Themes of African history, such as African states and empires, slave trade, relationship of Egypt to rest of Africa, Bantu origins and migrations, and French policy of Assimilation and Association. Offered in alternate years. GE credit: ArtHum or SocSci | ACGH, AH or SS, WC, WE—Olmsted (change in existing course—eff. spring 16)

125. Topics in Early Modern European History (4)
Laboratory/discussion—3 hours; term paper. Social and cultural topics in early modern European history. In Medieval and Renaissance Italy, early modern Italy, Ancient Regime France, family and sexuality, and material culture and daily life. May be repeated for credit: Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

131A. Early Modern European History (4)
Lecture—3 hours; written reports. Western European history from about 1350 to about 1500. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

136. Scientific Revolution (4)
Lecture/discussion—3 hours; term paper. History of science in Western Europe [1400-1750]. Investigates the changing definitions of science in the age of Copernicus, Galileo and Newton. Considers the evolution of new ideas about nature: experimental observation, and scientific theory. Offered in alternate years. GE credit: ArtHum or SocSci, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

138A. The Rise of the Russian Empire, 1304-1925 (4)
Lecture—3 hours; term paper. Prerequisite: courses 4B and 4C recommended. Expansion of the Russian state in Muscovite and imperial era. Emphasis on autocratic rule, the incorporation of non-Russian peoples, and Russia as a Great Power. Only two units of credit will be allowed to students who have completed former course 137B. Offered irregularly. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. winter 15)

138B. Reform and Revolution in Tsarist Russia, 1825-1917 (4)
Lecture—3 hours; term paper. Prerequisite: course 4C recommended. Processes of state reform and social change in the 19th century; failure of reform and collapse of the revolution of 1917. Offered in alternate years. GE credit: ArtHum or SocSci, Wrt | AH or SS, WC, WE—S. Campbell (change in existing course—eff. winter 15)

140. The Rise of Capitalism in Europe (4)
Lecture—3 hours; term paper. Comparative analysis of major interpretations of the rise of merchant capitalism during the Middle Ages and Renaissance; European expansion overseas, 1450-1815; the transition to modern capitalism via industrial revolution. Interplay of social, political, cultural, and economic history. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

142A. History of the Holocaust (4)
Lecture—3 hours; term paper. Topics include comparative genocide, medieval and modern antisemitism, modern German history, the rise of Nazism, Jewish life in Europe before the Nazi period, and the fate of the Jewish communities and other persecuted groups in Europe from 1933-1945. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

142B. The Memory of the Holocaust (4)
Lecture—3 hours; term paper. Examination of the literary, philosophical, theological and artistic responses to the Holocaust of the European Jews. Exploration of how memory is constructed, by whom and for what purposes. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

144B. History of Germany since 1789 (4)
Lecture/discussion—3 hours; extensive writing. History of the German lands in the age of the French Revolution; 19th-century liberalism, nationalism, and industrialization; the World Wars, National Socialism, and the Holocaust; east and west Germany in the Cold War; the post-reunification scene. (Not open for credit to students who have completed former course 144.) Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

159. Women and Gender in Latin American History (4)
Lecture—3 hours; extensive writing. Roles of women and men in the history of Latin America, with an emphasis on the intersection of gender with racial and class categories. Introduction to the theoretical premises of women’s and gender history. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

160. Spain and America in the 16th Century (4)
Lecture—3 hours; term paper. The Atlantic world in the 16th century, particularly the transcultural and reciprocal social and economic relations between Spain and America in the course of colonization. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

164. History of Chile (4)
Lecture—3 hours; term paper. Emphasis on the history of Chilean political economy from 1930 to the present. Various strategies of development (modernization, Marxism, Neo-Liberalism); the rise of mass politics; the course of foreign relations; and the rich- ness of Chilean literature. Offered irregularly. GE credit: ArtHum or SocSci | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

167. Modern Latin American Cultural and Intellectual History (4)
Lecture—3 hours; term paper. Introduction to the cultural and intellectual history of modern Latin America including architecture, cinema, painting, music, and literature. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WC, WE—Olmsted (change in existing course—eff. fall 16)

173. Becoming an American: Immigration and American Culture (4)
Lecture—3 hours; term paper. An introduction to the wide range of immigrant experiences and cycles of nativism that have shaped American culture in the twentieth century. From novels, memoirs and films, students will explore how external and internal immi- gration has created a multicultural society. Offered alternate years. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE—Olmsted (change in existing course—eff. fall 16)

175. American Intellectual History (4)
Lecture—3 hours; term paper. Ideas that shaped politics and society in the United States from colonial times to the present. Topics include Ameri- can liberalism, republicanism, democracy, constitu- tionalism, communitarianism, utopianism, pragmatism, feminism, Darwinism, nationalism, con- servatism, and economics. Offered in alternate years. GE credit: ArtHum or SocSci, Wrt | ACGH, AH or SS, WE—Olmsted (change in existing course—eff. fall 16)

178A. Race in America, 1492-1865 (4)
Lecture—4 hours. Racial formation during the Age of Discovery, the Colonial Period, Early National and Antebellum periods up to the Civil War. Not open for credit to students who have completed course 178. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE—Olmsted (change in existing course—eff. fall 16)

179. Asian American History, 1850-Present (4)
Lecture—3 hours; term paper. The historical experi- ence of people of Asian ancestry in the United States from the mid-nineteenth century to the present. Migration, labor, community formation, race rela- tions, women and gender, popular culture. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, WE—Olmsted (change in existing course—eff. fall 16)

181. Religion in American History to 1890 (4)
Lecture—3 hours; term paper. American religious history from colonization through the Gilded Age. Topics include religious diversity in America; native American religion; Protestant evangelism; gender and religion; religion and bigotry; African American religion; religion in the Civil War; and religion's
response to modernization. Offered in alternate years. GE credit: ArtHum or SocSci, Wrt | ACGH, AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

183. Gender and Justice in American History (4)  
Lecture/discussion—3 hours; term paper. Intersection of gender and law in North America from the colonial period through the 20th century. Topics include whippings, suffrage, child custody, protective labor laws, regulation of sexuality. Analysis of legal change, trials, and cultural influences. Offered irregularly. GE credit: ArtHum or SocSci | ACGH, AH or SS, DB, WE.  
(change in existing course—eff. fall 16)

190C. Middle Eastern History III: The Ottomans, 1401-1730 (4)  
Lecture—3 hours; extensive writing. Middle Eastern history from the foundation of the Ottoman Empire on the borders of Byzantine Anatolia through its expansion into Europe, Asia, and Africa, creating a new cultural synthesis including the Arab, Greek, Islamic, Mongol, Persian, Slavic, and Turkish traditions. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

191C. Late Imperial China (4)  
Lecture—2 hours; discussion—1 hour; two long papers. Prerequisite: course 9A or upper division standing recommended. Patterns and problems of Chinese life traced through the Ming and Ch’ing dynasties (1368-1911), prior to the confrontation with the West in the Opium War. Readings include primary sources and novels portraying elite ethos as well as popular culture. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

191D. Nineteenth Century China: The Empire Confronts the West (4)  
Lecture—2 hours; discussion—1 hour; term paper. Prerequisite: course 9A or upper division standing recommended. The decline and fall of the Chinese Empire, with particular attention to the social and political crises of the 19th century, and the response of government officials, intellectuals, and ordinary people to the increasing pressures of Western imperialism. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

191E. The Chinese Revolution (4)  
Lecture—2 hours; discussion—1 hour; extensive writing. Prerequisite: upper division standing recommended. Analysis of China’s cultural and political transformation from Confucian empire into Communist state. Focus on the emergence and triumph of peasant revolutionary strategy (to 1949), with some attention to its implications for post-revolutionary culture and politics. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

191G. Special Topics in Chinese History to 1800 (4)  
Lecture—3 hours; extensive writing. Prerequisite: course 9A recommended. Topics in the history of China from the beginning of the imperial period through the high Qing dynasty. Topics may be framed chronologically (e.g., the Ming Dynasty) or thematically (e.g., Trade in early Chinese history). May be repeated one time for credit when topic differs. Offered irregularly. GE credit: AH, WC, WE.  
(change in existing course—eff. fall 16)

191H. Special Topics in Chinese History after 1800 (4)  
Lecture—3 hours; extensive writing. Prerequisite: course 9A recommended. Topics in the history of China since 1800. Topics may be framed chronologically (e.g., The Republican Period [1911-1948]) or thematically (e.g., The Modern Evolution of Chinese Law). May be repeated one time for credit when topic differs. Offered irregularly. GE credit: AH, WC, WE.  
(change in existing course—eff. fall 16)

195B. History of Modern Korea (4)  
Lecture—3 hours; laboratory/discussion—1 hour. Prerequisite: upper division standing recommended. History of Modern Korea, from Yi dynasty period to 1990s. Covers the political and socioeconomic changes in 19th century, modernization under Japanese colonialism, postwar economic growth and effects of the Cold War. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

1995B. History of Modern Korea (4)  
Lecture—3 hours; laboratory/discussion—1 hour. Prerequisite: upper division standing recommended. History of Modern Korea, from Yi dynasty period to 1990s. Covers the political and socioeconomic changes in 19th century, modernization under Japanese colonialism, postwar economic growth and effects of the Cold War. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, WC, WE.  
(change in existing course—eff. fall 16)

Graduate  
201A. Sources and General Literature of History; Ancient (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Ancient. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201B. Sources and General Literature of History; Medieval (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Medieval. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201C. Sources and General Literature of History; Renaissance and Reformation (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Renaissance and Reformation. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201D. Sources and General Literature of History; Early Modern Europe (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Early Modern Europe. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201E. Sources and General Literature of History; Europe since 1815 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Europe since 1815. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201F. Sources and General Literature of History; China to 1880 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. China to 1880. May be repeated for credit when different subject area is studied.  
(change in existing course—eff. summer 15)

201G. Sources and General Literature of History; China Since 1880 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. China since 1880. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201H. Sources and General Literature of History; Britain (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Britain. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201I. Sources and General Literature of History; Latin America Since 1810 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Latin America since 1810. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201J. Sources and General Literature of History; American History to 1877 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. American History to 1877. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201K. Sources and General Literature of History; United States, 1787-1896 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. United States, 1787-1896. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201L. Sources and General Literature of History; United States, 1897-1930 (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. United States, 1897-1930. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201M. Sources and General Literature of History; Middle East (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Middle East. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)

201N. Sources and General Literature of History; Modern Japan (4)  
Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Modern Japan. May be repeated for credit when different subject area is studied. Offered in alternate years.  
(change in existing course—eff. summer 15)
201P. Sources and General Literature of History; African Historiography (4) Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. African Historiography. May be repeated for credit when different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

201Q. Sources and General Literature of History; Cross-Cultural Women’s History (4) Seminar—3 hours, term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Cross-Cultural Women’s History. May be repeated for credit when different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

2015. Sources and General Literature of History; History of Science and Medicine (4) Seminar—3 hours, term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. History of Science and Medicine. May be repeated for credit when different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

201W. Sources and General Literature of History; Advanced Topics in World History (4) Seminar—3 hours, term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. Advanced Topics in World History. May be repeated for credit when different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

201X. Undergraduate Proseminar in History; Comparative History (5) Seminar—3 hours, term paper. Limited enrollment. Designed primarily for history majors. Intensive reading, discussion, research, and writing in selected topics in the various fields of history. Comparative History, selected topics in cultural, political, economic, and social development. May be repeated for credit when different subject area is studied. (change in existing course—eff. summer 15)

202A. Major Issues in Historical Interpretation; Ancient (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Ancient. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. (change in existing course—eff. summer 15)

202B. Major Issues in Historical Interpretation; Medieval Europe (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Medieval Europe. Readings, papers, and class reports. Offered in alternate years. (change in existing course—eff. summer 15)

202C. Major Issues in Historical Interpretation; Modern Europe (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Modern Europe. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202D. Major Issues in Historical Interpretation (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Africa. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202E. Major Issues in Historical Interpretation; India (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. India. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202F. Major Issues in Historical Interpretation; China (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. China. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202G. Major Issues in Historical Interpretation; Japan (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Japan. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202H. Major Issues in Historical Interpretation; United States History (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. United States. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202I. Major Issues in Historical Interpretation; Latin America (4) Seminar—3 hours, term paper. Prerequisite: graduate standing. Fundamental issues and debates in the study of history. Latin America. Readings, papers, and class reports. May be repeated for credit when a different subject area is studied. Offered in alternate years. (change in existing course—eff. summer 15)

202J-L or 202H. Research in literature, methods, and sources on aspects of United States history, culminating in each student completing a research paper in the field by the end of the second quarter. May be repeated for credit. (Deferred grading only, pending completion of sequence.) Offered irregularly. (change in existing course—eff. summer 15)

202L. Research Seminar (4) Seminar—3 hours; term paper. Prerequisite: course 201J-L or 202H. Research in literature, methods, and sources on aspects of United States history, culminating in each student completing a research paper in the field by the end of the second quarter. May be repeated for credit. (Deferred grading only, pending completion of sequence.) Offered irregularly. (change in existing course—eff. summer 15)

271A. United States History (4) Seminar—3 hours; term paper. Prerequisite: course 201J-L or 202H. Research in literature, methods, and sources on aspects of United States history, culminating in each student completing a research paper in the field by the end of the second quarter. May be repeated for credit. (Deferred grading only, pending completion of sequence.) Offered irregularly. (change in existing course—eff. summer 15)

271B. United States History (4) Seminar—3 hours; term paper. Prerequisite: course 201J-L or 202H. Research in literature, methods, and sources on aspects of United States history, culminating in each student completing a research paper in the field by the end of the second quarter. May be repeated for credit. (Deferred grading only, pending completion of sequence.) Offered irregularly. (change in existing course—eff. summer 15)

Human Development

New and changed courses in Human Development (HDE)

Upper Division

140. Communication and Interaction with Young Children (2) Lecture—2 hours. Prerequisite: course 100A; concurrent enrollment in course 140L required; consent of instructor. Enrollment requires sign up for laboratory time at the Child and Family Studies Center located at 2441 First Street, Davis, CA. Integration of research, theory and practice in child development, emphasizing the role of relationships in creating a growth-promoting environment for young children. Includes: peer relationships, emotional understanding and self regulation, attachment, communication and school readiness. —F, W, S (F, W, S) Chen (change in existing course—eff. winter 15)

140L. Laboratory in Early Childhood (3-5) Laboratory—6-15 hours; laboratory/discussion—3 hours. Prerequisite: course 140, must be taken concurrently for first 3 units of credit; students must contact the Center for Child and Family Studies to enroll; consent of instructor. Limited enrollment. Application of theories of learning and development to interactions with infants and toddlers, and preschoolers at Early Childhood Laboratory. Applied skills in communication, guidance and curriculum. May be repeated two times for credit. [P/NP grading only,—F, W, S (F, W, S) Chen (change in existing course—eff. winter 15)

Graduate

240. Peer Relationships During Adulthood (4) Lecture/discussion—4 hours. Graduate standing in Human Development, Psychology, Education, or consent of instructor. Course examines the role of peer relationships in adolescent development including forms and functions of the individual, dyadic and group levels. Ethnicity and cross cultural research will be discussed. Emphasis on methodology, including surveys, peer nominations/sociometrics, experimental, and observational designs. Offered irregularly.—K. Conger (change in existing course—eff. winter 15)
250. Current Research on Family Relationships (A) 
Lecture/discussion—6 hours; term paper. Graduate standing in Human Development Graduate Group, Psychology, Sociology, a related social science, or consent of instructor. Discussion of theories, methods, and current research on the nature and development of sibling, romantic, and parent-child relationships across the lifespan. Emphasis on interpersonal and family processes examined in ethnic, cultural contexts. Implications for individual development will be addressed. —S. K. Conger (change in existing course—eff. winter 15)

252. Family Research, Programs and Policy (4) 
Seminar—3 hours; term paper. Graduate standing in Human Development, Psychology, Sociology, related social sciences, or consent of instructor. Course examines the competing interests of research, policy, and service on current issues of family functioning and individual well being. The course considers communication barriers between researchers, practitioners, and policy makers. Offered in alternate years. —K. Watenpaugh (new course—eff. fall 15)

Human Rights

New and changed courses in Human Rights (HMR)

Lower Division

1. Human Rights/Wrongful Rights (4) 
Lecture—3 hours; discussion—1 hour. Introduction to Human Rights and the problems they seek to address. Using key episodes of inhumanity like slavery, genocide, and racism. Examines how international movements for social justice led to the emergence of the international Human Rights system. GE credit: ArtHum or SocSci | AH or SS, WC, WE. —F, W, S. (F, W, S.) (new course—eff. fall 15)

Upper Division

136. Human Rights in the Middle East (4) 
Lecture/discussion—3 hours; term paper. Study of the experience of Human Rights in the modern Middle East, with special attention to the Human Rights issues raised by events of Arab Spring; Palestine-Israel conflict; history of genocide, mass killing and totalitarianism in the region. Offered in alternate years. GE credit: ArtHum or SocSci | AH or SS, WC, WE. —S. (S.) Watenpaugh (new course—eff. fall 15)

138. Human Rights, Gender, and Sexuality (4) 
Lecture/discussion—3 hours; term paper. Gender and sexuality in the context of human rights. Topics include women’s participation in the public sphere, the right to change gender, the right for family privacy, and the right to marriage. [Same course as Religious Studies 138.] Offered in alternate years. GE credit: ArtHum | AH, WC, WE.—F, W, S, Su. (F, W, S, Su.) O’Keefe (new course—eff. fall 15)

161. Human Rights in Latin America (4) 
Lecture—3 hours; term paper. History of the origins, denial and protection of Human Rights in Latin America. Emphasis on dictatorships, political violence, social movements, democracy, justice, accountability, truth commissions, memory. Offered in alternate years. [Same course as History 161.] GE credit: ArtHum or SocSci | AH or SS, VL, WC, WE.—S. Schlottbacker (new course—eff. spring 15)

Graduate

299. Individual Study (1-12) 
Prerequisite: consent of instructor. Restricted to graduate students. Individual study for the designated emphasis in human rights. (S/U grading only.) May be repeated for credit. —F, W, S. (F, W, S.) (new course—eff. fall 14)

Humanities

New and changed courses in Humanities (HUM)

Professional

396. Teaching Assistant Training Practicum (1-4) 
Prerequisite: graduate standing; consent of instructor. May be repeated for credit. (S/U grading only.) (change in existing course—eff. winter 15)

Hydrology

New and changed courses in Hydrology (HYD)

Upper Division

147. Runoff, Erosion and Water Quality Management in the Tahoe Basin (3) 
Lecture/labatory—30 hours; fieldwork—15 hours; discussion—10 hours; term paper. Prerequisite: Physics 7B or 9B, Mathematics 16C or 21C, Civil and Environmental Engineering 142 or course 141 or Environmental and Resource Sciences 100. Practi- cal hydrology and runoff water quality management from Tahoe Basin slopes. Development of hillslope and riparian restoration concepts, modeling and applications from physical science perspectives including precipitation-runoff relationships, sediment transport, and detention ponds. Five days of instruc- tion in Tahoe City. [Same course as Biological Sys- tems Engineering 147.] GE credit: SciEng | QL, SE, SL.—S. (S.) Grimes (change in existing course—eff. winter 15)

Hydrologic Science (A Graduate Group)

New and changed courses in Hydrologic Science (HYD)

Graduate

210. Vadose Modeling and Characterization (3) 
Lecture—1.5 hours; laboratory—3 hours; discus- sion—0.5 hours. Prerequisite: Soil Science 107, or consent of instructor. Principles and modeling of water flow and chemical transport in the vadose zone, with specific applications to soils. Topics include hydraulic properties, finite difference applica- tion to unsaturated water flow, parameter optimi- zation, diffusive and convective transport in gaseous and liquid phases. Offered in alternate years. —S. Hopmans (change in existing course—eff. spring 15)

245. Climate Change, Water and Society (4) 
Lecture—4 hours. Class size limited to 25 students. Integration of climate science and hydrology with policy to understand hydroclimatology and its impact upon natural and human systems. Assign- ments: readings, take-home examination on climate and hydrologic science, paper that integrates course concepts into a research prospectus or review article. (Same course as Atmospheric Science 245 and Ecology 245.) —F. (F) Fogg, Lubell, Ullrich (new course—eff. spring 15)

254Y. Ecohydraulics (3) 
Web virtual lecture—1 hour; discussion—1 hour; extensive problem solving. Use of 2D hydrodynamic modeling to perform instream flow assessment by exploring flow-dependent hydraulic patterns at multiple spatial scales and extrapolating results with empirical and analytical functions to evaluate geomorphic resilience and ecological functions. Offered in alternate years. —P. (P) Pasternack (new course—eff. fall 14)

Immunology

New and changed courses in Immunology (IMM)

Professional

201. Introductory Immunology (4) 
Lecture—4 hours. Prerequisite: graduate standing. Enrollment limited to 30 students. Comprehensive introduction to the principles of immunology. —F. (F) Miller (change in existing course—eff. winter 15)

204. Topics in Innate Immunity (2) 
Extensive writing or discussion—1 hour; performance instruction—1 hour. Prerequisite: course 201 or equivalent; course 293 preferred. Restricted to first- or second-year GGI and MGG students; others with permission of instructor; enrollment limited to 18 students. Covers current topics in the field of innate immunity through student seminar presentations and critical evaluation of the literature. Concepts include: pathogen recognition, intercellular communication, specialized cellular function and effector/signaling molecules. Offered in alternate years. —S. (S.) Bevins (change in existing course—eff. winter 15)

Integrated Studies

New and changed courses in Integrated Studies (1ST)

Lower Division

8A. Special Topics in Natural Science and Mathematics (4) 

8B. Special Topics in Humanities (4) 
Lecture—3 hours; discussion—1 hour. Limited enrollment. Group study of a special topic in humanities. Course varies with topic offered. May be repeated for credit. GE credit: ArtHum, Writ | AH.—F, W, S. (F, W, S.) (change in existing course—eff. winter 15)

8C. Special Topics in the Social Sciences (4) 
International Commercial Law
(A Graduate Group)

New and changed courses in International Commercial Law (A Graduate Group) (ICL)

Graduate
201. Orientation in United States Law (7)
Lecture/discussion—20 hours. Prerequisite: Law school education or the equivalent. Examination of the Common Law System of the United States. Includes structure of the U.S. government, Constitutional law, contracts, torts, real property, consumer law, securities law, bankruptcy, antitrust, taxation, labor law, environmental law, ethics, remedies, legal research and trial practice.

211. Negotiations and Alternative Dispute Resolution (1)
Lecture/discussion—10 hours. Prerequisite: course 201; law school education or the equivalent. Legal rules and concepts applicable to business associations including general partnerships, joint ventures, limited partnerships, limited liability entities, and sole proprietorships.

216. International Business Transactions (2)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. Legal problems arising from international business transactions. Focus on international sales contracts, choice of law, forum selection, letters of credit, transfers of technology, regulation of bribery, development of joint ventures, repatriation of profits, foreign exchange problems, and national efforts to control imports.

220. United States Taxation of Multinational Investments (2)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. Analysis of the United States taxation of multinational investments including jurisdiction of tax, the U.S. tax system, foreign tax credits, treaties, and transfer pricing.

236. United States Securities Law and Regulation (2)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. Issues and policies associated with securities law. Topics include the regulation of public offerings, transactions by corporate insiders, regulation of corporate disclosure and conduct, and the liabilities of corporations and individuals under anti-fraud provisions.

247. Banking Law (1)
Lecture/discussion—10 hours. Prerequisite: course 201; law school education or the equivalent. Institutional features of international banking transactions, the structure of a large financial deal, and the mechanics of overseeing large loans. Emphasis on negotiable instruments such as bills of lading, letters of credit, standby letters of credit, and interbank transactions.

251. United States Litigation Issues (1)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. Emphasis on preparing for a trial in the United States. Includes the study of pre-trial motions, jury selection, opening statements, rules of evidence, closing arguments, and the selection of appropriate strategies.

262. Antitrust (1)
Lecture/discussion—10 hours. Prerequisite: course 201; law school education or the equivalent. Emphasis on preparing for a trial in the United States. Includes the study of pre-trial motions, jury selection, opening statements, rules of evidence, closing arguments, and the selection of appropriate strategies.

270. Financing International Transactions (3)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. How capital is raised in international markets. Investment strategies for U.S. markets. Taxation of financial investments, international currency regulation, and assessing rates of return on international investments.

274. Intellectual Property (2)
Lecture/discussion—20 hours. Prerequisite: course 201; law school education or the equivalent. Intensive study of intellectual property law. Including copyright, trademark and patent law and unfair competition.

299. Advanced Research in Legal Problems (1-4)
Prerequisite: course 201; law school education or the equivalent. Permission of supervising instructor. Student individualized research projects under faculty supervision. (S/U grading only.)

International Agricultural Development

New and changed courses in International Agricultural Development (IAD)

Upper Division
160. Agroforestry: Global and Local Perspectives (3)
Lecture/discussion—3 hours. Prerequisite: Plant Sciences 2 or Biological Sciences 1C or 2C; Plant Sciences 142 or 150 or Biological Sciences 2B or a general ecology course. Traditional and evolving use of trees in agricultural ecosystems; their multiple roles in environmental stabilization and production of food, fuel, and fiber; and socioeconomic barriers to the adoption and implementation of agroforestry practices. Not open for credit to students who have taken previously taken Agricultural Management and Rangeland Resources 160. Offered in alternate years. GE credit: SciEng | SE. (F.) 3

Graduate
217. Conservation and Sustainable Development in Third World Nations (4)
[cancelled course—eff. fall 14]

220. Food and Nutrition Strategies in Developing Countries (4)
[cancelled course—eff. fall 14]
International Relations

New and changed courses in International Relations (IRE)

Upper Division

194HA. Special Study for Honors Students (4)
Seminar—2 hours; term paper. Prerequisite: open only to majors of senior standing who qualify for honors program. Directed reading, research, and writing on topics selected by students and instructor culminating in preparation of a senior honors thesis under direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SocSci | OL, SS, WE.

[change in existing course—eff. summer 15]

194HB. Special Study for Honors Students (4)
Seminar—2 hours; term paper. Prerequisite: open only to majors of senior standing who qualify for honors program. Directed reading, research, and writing on topics selected by students and instructor culminating in preparation of a senior honors thesis under direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SocSci | OL, SS, WE.

[change in existing course—eff. summer 15]

Italian

New and changed courses in Italian (ITA)

Lower Division

4. Intermediate Italian (4)
Lecture/discussion—3 hours; laboratory—3 hours. Prerequisite: course 3 or 3S. Review of grammar and syntax through written exercises and short prose works. Intended to develop the linguistic foundations of students who have completed the first year language classes. GE credit: WC.

[change in existing course—eff. spring 16]

5. Intermediate Italian (4)
Lecture/discussion—3 hours; laboratory—3 hours. Prerequisite: course 4 or 4S. Review and study of grammar and syntax, readings of short prose works, and written exercises. Intended to prepare students to read, understand, and discuss modern Italian. GE credit: WC.

[change in existing course—eff. spring 16]

9. Reading Italian (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 5. Reading and discussion of modern Italian prose, including selections from creative, scientific and journalistic writings. Introduction to contemporary Italian literature and culture. Strengthening the student’s command of the Italian language. GE credit: ArtHum | AH, WC, F, W, S, J.

[change in existing course—eff. fall 14]

95. Reading Italian (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 5 or 5S. Reading and discussion of modern Italian prose, including selections from creative, scientific and journalistic writings. Introduction to contemporary Italian literature and culture as well as strengthening the student’s command of the Italian language. This course is taught abroad. Not open for credit to students who have completed course 9. GE credit: ArtHum | AH, WC, F, S, F, S, J.

[change in existing course—eff. winter 15]

50. Studies in Italian Cinema (4)
Lecture—2 hours; discussion—1 hour; term paper. Lower division standing. Introduction to Italian cinema through its genres. Focus is on cinema as a reflection of and a comment on modern Italian history. Film will be studied as an artistic medium and as a form of mass communication. Offered irregularly. ArtHum, WRT | AH, WC, WE. —Heyer-Caput

[change in existing course—eff. spring 16]

98. Directed Group Study (1-5)
Prerequisite: lower division standing and consent of instructor. Primarily intended for lower division students. Offered irregularly. (P/NP grading only.) GE credit: ArtHum | AH, OL, WC, WE. —Heyer-Caput

[change in existing course—eff. spring 16]

Upper Division

101. Advanced Conversation, Composition, and Grammar (4)
Lecture—3 hours. Prerequisite: course 9 or 9S or consent of instructor. GE credit: ArtHum | AH, OL, WC, WE. —Heyer-Caput

[change in existing course—eff. spring 16]

1015. Advanced Composition, Conversation and Grammar (4)
Lecture—3 hours; extensive writing. Prerequisite: course 9 or 9S or consent of instructor. Practice in translation in Italian to English and English to Italian, using literary and non-literary texts of different styles. Analysis of linguistic problems and elements of style contained in the translation material. GE credit: AH, WC.

[change in existing course—eff. spring 16]

104. Italian Translation and Style (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S; consent of instructor. Practice in translation from Italian to English and English to Italian, using literary and non-literary texts of different styles. Analysis of linguistic problems and elements of style contained in the translation material. Course will be taught abroad. Not open for credit to students who have completed course 101. GE credit: ArtHum | AH, OL, WC, WE. —F. F. Heyer-Caput

[change in existing course—eff. spring 16]

1045. Translation and Style (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S. Practice in translation from Italian to English and English to Italian, using literary and non-literary texts of different styles. Analysis of linguistic problems and elements of style contained in the translation material. Course will be taught abroad. Not open for credit to students who have completed course 104. GE credit: ArtHum | AH, WC, F F. Heyer-Caput

[change in existing course—eff. spring 16]

105. Introduction to Italian Literature (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S; consent of instructor. Introduction to the study of the principal authors, works, and movements of the Medieval, Renaissance, and Early Modern periods in Italy. GE credit: ArtHum | AH, OL, WC. —Heyer-Caput

[change in existing course—eff. spring 16]

1055. Introduction to Italian Literature (4)
[cancelled course—eff. winter 04]

112. Medieval and Renaissance Poetry: St. Francis to Petrarch (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S; consent of instructor. Study of the origins of Italian religious and secular poetry of the 13th and 14th centuries. A diversified poetry is illustrated in works of St. Francis, Dante, Cavalcanti, Petrarch, Castiglione, and Tasso. GE credit: ArtHum | AH, OL, WC, WE. —Heyer-Caput

[change in existing course—eff. spring 16]

113. Dante Alighieri, Divina Commedia (Inferno, Purgatorio, Paradiso) (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S or equivalent; consent of instructor. Study of Dante Alighieri’s Divina Commedia, and its role in the development of Italian language and literature. Emphasis will be placed on reading the whole poem within the historical context of the Middle Ages. GE credit: ArtHum | AH, OL, WC, WE.

[change in existing course—eff. spring 16]

114. Boccaccio, Decameron, and the Renaissance Novella (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S or the equivalent. Consent of instructor. Study of the development of the short story in Italy, as exemplified in Giovanni Boccaccio’s Decameron, in its presence and subsequent followers. GE credit: ArtHum | AH, OL, WC. —F. Schiesari

[change in existing course—eff. spring 16]

115A. Studies in the Cinquecento (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S or consent of instructor or the equivalent. Analysis of key texts from the high moment of the Italian Renaissance. The political and aesthetic legacy of humanism will be foregrounded in relation to authors such as Ficino, Ariosto, Machiavelli, Ariosto, Castiglione, and Tasso. GE credit: ArtHum | AH, OL, WC. —F. Schiesari

[change in existing course—eff. fall 14]

115D. Early Modern Italian Lyric (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or consent of instructor. Examination of the poetic tradition influenced by Petrarch. Consideration of the relation between gender and genre in such poets as Petrarach, Sesto, della Casa, Tasso, Marino, Gasparo Stampa, Verismo Franco, Isabella di Morra. Offered in alternate years. GE credit: ArtHum | AH, WC, WE. —F. Schiesari

[change in existing course—eff. spring 16]

119. Italian Literature of the Nineteenth Century (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or consent of instructor. Examining Romanticism in Italy, including Manzoni, Verga, and Verismo. GE credit: ArtHum | AH, OL, WC, WE. —Heyer-Caput

[change in existing course—eff. spring 16]

128. Topics in Italian Culture (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: course 9 or 9S; consent of instructor. In-depth study of a particular topic in Italian Culture. Topics include: Italian Cities; Church and State; the “Southern Question”; Fascism and Resistance; Counter Culture; Feminism and Terrorism; Multicultural Italy. May be repeated one time for credit when topic differs. GE credit: ArtHum | AH, OL, WC, WE. —Bassi

[change in existing course—eff. spring 16]

131. Autobiography in Italy (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 9 or 9S or consent of instructor. The development of representations of selfhood with particular attention to generic conditions, the confessional tradition and the problem of women’s self-representation. Authors studied may included Petrarch, Tasso, Casanova, Allieri, Zvevak, Sicibilla Aleramo and Primo Levi. GE credit: ArtHum | AH, OL, WC, WE. —Heyer-Caput, Schiesari

[change in existing course—eff. spring 16]

145. Special Topics in Italian Literature (4)
Lecture/discussion—4 hours. Prerequisite: course 9 or 9S or consent of instructor. Study of special topics and themes in Italian literature, such as comic literature, epic poetry, pre-twentieth century theater, feminism, women and literature, and the image
Japanese

New and changed courses in Japanese (JPN)

**Lower Division**

1A. Accelerated Intensive Elementary Japanese (15)

Lecture/discussion—15 hours. Special 12 week accelerated, intensive summer session course that combines the work of courses 1, 2, and 3. Introduction to Japanese grammar and development of all language skills in a cultural context with emphasis on communication. Not open for credit to students who have completed course 1, 2, or 3. GE credit: ArtHum | AH, OL, WC—Su.

2. Elementary Japanese (5)

Lecture/discussion—5 hours. Prerequisite: successful completion (C- or better) of course 1 or the equivalent language proficiency. Continuation of training in basic Japanese spoken and written skills. GE credit: ArtHum | AH, OL, WC—W. (W)

3. Elementary Japanese (5)

Lecture/discussion—5 hours. Prerequisite: successful completion (C- or better) of course 2 or equivalent language proficiency. Continuation of training in basic spoken and written skills in Japanese language. GE credit: ArtHum | AH, OL, WC—S. (S)

4. Intermediate Japanese (5)

Lecture/discussion—5 hours. Prerequisite: successful completion (C- or better) of course 3 or the equivalent language proficiency. Intermediate-level training in spoken and written Japanese in cultural context, based on language skills developed in course 3. GE credit: ArtHum | AH, OL, WC—F (F)

5. Intermediate Japanese (5)

Lecture/discussion—5 hours. Prerequisite: successful completion (C- or better) of course 4 or the equivalent language proficiency. Intermediate-level training in spoken and written Japanese in cultural context, based on language skills developed in course 5. GE credit: ArtHum | AH, OL, WC—W. (W)

6. Intermediate Japanese (5)

Lecture/discussion—5 hours. Prerequisite: successful completion (C- or better) of course 5 or the equivalent language proficiency. Continuation of training in spoken and written Japanese in cultural context, based on language skills developed in course 6. GE credit: ArtHum | AH, OL, WC—S. (S)

**Upper Division**

104. Modern Japanese Literature: War and Revolution (3)

Lecture/discussion—3 hours. Perspectives and sensibilities with which major modern Japanese writers have interpreted the traumatic and often poignant experiences of war and socio-political upheavals from the late nineteenth century to the 1970s. Lectures, discussions, and readings in English. Offered in alternate years. GE credit: ArtHum, Div | AH, WC—Chang

105. Modern Japanese Literature: Hero and Anti-hero (4)

Lecture/discussion—4 hours. The ways in which representative hero and anti-hero protagonists in modern Japanese literature perceive, confront, challenge, and resolve a wide array of social, political, and moral problems of their times. Course taught in English. GE credit: ArtHum, Div | AH, WC—Chang

106. Japanese Culture Through Film (4)

Lecture—3 hours; film viewing—3 hours. Prerequisite: consent of instructor. Aspects of Japanese culture such as love, sexuality, war, the military, the family, the position of women, growing up and death as portrayed in Japanese cinema. Lectures, discussion, and readings in English. Films with English subtitles. GE credit: ArtHum, Div | AH, WC—Chang, Gong

107. Modern Japanese Autobiographies (in English) (4)

Lecture—3 hours; term paper/discussion—1 hour. Exploring the modern and contemporary Japanese social and cultural landscape through critical analysis of modern Japanese autobiographies by prominent and other authors in the 20th and 21st centuries. Offered in alternate years. GE credit: ArtHum, Div | AH, WC—F. (F.) Chang

108. Poetry of China and Japan (in English) (4)

Lecture—3 hours; discussion—1 hour. A comparative approach to Chinese and Japanese poetry, examining poetic practice in the two cultures; includes a general outline of the two traditions, plus study of poetic forms, techniques, and distinct treatments of universal themes: love, nature, war, etc. (Same course as Chinese 108) GE credit: ArtHum, Div | AH, WC—Chang


Lecture—3 hours; discussion—1 hour; film viewing—3 hours. Japanese popular culture, from its medieval/early modern precedents to contemporary incarnations. Emphasis on the major forms of twenty-first-century popular culture, including genre films, popular television, TV manga (cartoons), animation and science fiction. GE credit: ArtHum, Div | AH, OL, WC—Chang

111. Modern Japanese: Reading and Discussion (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: successful completion (C- or better) of course 4 or the equivalent language proficiency. Readings in modern Japanese short stories, newspaper articles, and essays; conversation practice based on these readings. GE credit: ArtHum | AH, OL—F (F)

Quarter Offered: F, W, S, Summer 2015/2016 offering in parentheses
112. Modern Japanese: Reading and Discussion (4) Lecture—3 hours; discussion—1 hour. Prerequisite: successful completion (C- or better) of course 111 or equivalent language proficiency. Continuation of course 111. GE credit: ArtHum | AH, OL, WC.—W, (W, W.) (change in existing course—eff. spring 16)

113. Modern Japanese: Reading and Discussion (4) Lecture—3 hours; discussion—1 hour. Prerequisite: successful completion (C- or better) of course 112 or equivalent language proficiency. Continuation of course 112. GE credit: ArtHum | AH, OL, WC.—S, (S.) (change in existing course—eff. spring 16)

114A. Spoken Japanese (2) Discussion—2 hours. Prerequisite: course 6 or the equivalent. Training in spoken Japanese for students with a basic working knowledge of the language. (P/NP grading only) GE credit: OL. (change in existing course—eff. summer 15)

114B. Spoken Japanese (2) Discussion—2 hours. Prerequisite: course 114A or consent of instructor. Continuation of course 114A. Training in spoken Japanese for students with a basic working knowledge of the language. (P/NP grading only) GE credit: OL. (change in existing course—eff. summer 15)

114C. Spoken Japanese (2) Discussion—2 hours. Prerequisite: course 114B or consent of instructor. Continuation of course 114B. Training in spoken Japanese for students with a basic working knowledge of the language. (P/NP grading only) GE credit: OL. (change in existing course—eff. summer 15)

115. Japanese Composition (2) Lecture—2 hours. Prerequisite: successful completion (C- or better) of course 6 or consent of instructor. Continuation of course 114A. Development of skills in the techniques of writing Japanese. Practice in short essay writing with an aim toward mastery of the vocabulary and syntax of written style Japanese.—F, (F.) (change in existing course—eff. spring 16)

117S. Intensive Modern Japanese: Reading and Discussion (15) Lecture/discussion—17 hours. Prerequisite: course 5. Introduction to basic Japanese grammar and development of more advanced reading, writing, and conversational skills in a cultural context. Combination of course 6, 111, 112, and 113 taught intensively in Japan. Not open to students who have taken courses 6, 111, 112, or 113; an exception can be made for students who have taken course 6 or its equivalent, provided that those five units are deducted from the 17 total unit load. GE credit: ArtHum | AH, OL, WC. (change in existing course—eff. summer 15)

115. Japanese Composition (2) Lecture—2 hours. Prerequisite: successful completion (C- or better) of course 6 or consent of instructor. Development of skills in the techniques of writing Japanese. Practice in short essay writing with an aim toward mastery of the vocabulary and syntax of written style Japanese.—F, (F.) (change in existing course—eff. spring 16)

130. Readings in Modern Japanese Literature to 1926 (4) Lecture/discussion—4 hours. Prerequisite: course 113. Restricted to completion of course 113 or equivalent as determined by taking a placement exam or consent of instructor. Short stories and essays by the major writers of the Meiji and Taishō eras, from 1868 to 1926. Authors include Natsume Sōseki, Izumi Kyōka, Tanizaki Jun'ichirō and Akutagawa Ryūnosuke. Readings and discussion in Japanese with translation into English. GE credit: ArtHum | AH, WC.—Sorensen (change in existing course—eff. summer 15)

115. Japanese Composition (2) Lecture—2 hours. Prerequisite: successful completion (C- or better) of course 6 or consent of instructor. Development of skills in the techniques of writing Japanese. Practice in short essay writing with an aim toward mastery of the vocabulary and syntax of written style Japanese.—F, (F.) (change in existing course—eff. spring 16)

138. Readings in the Humanities: Japan Today (4) Lecture/discussion—4 hours. Prerequisite: course 113. Restricted to completion of course 113 or equivalent as determined by taking a placement exam or consent of instructor. Topics of focus are centered on contemporary Japan. Themes center on defining Japan today in terms of its future and its past such as through its urban society, trends in architecture, “soft power” industries, and “traditional” elements as mainstays of Japan’s cultural currency. GE credit: ArtHum | AH, WC.—Sorensen (change in existing course—eff. spring 16)

141. Introduction to Classical Japanese (4) Lecture/discussion—4 hours. Prerequisite: course 113 or equivalent language proficiency. The basic features of classical Japanese grammar through careful reading of selected literary texts such as Hojoki or Tsurezuregusa.—Sorensen (change in existing course—eff. spring 16)

151. Japanese Linguistics (4) Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1, 2, and 3 or equivalent. Introduction to Japanese linguistics, featuring key aspects of the Japanese language. Analysis of Japanese from the perspectives of phonology, syntax, discourse analysis, sociolinguistics and psycholinguistics. GE credit: ArtHum or SocSci | Div, Wrt | SS.—Koyama (change in existing course—eff. summer 15)

152. Traditional Japanese Drama (4) Lecture—3 hours; discussion—1 hour. Survey in English of Japanese drama, focusing on traditional forms: noh, kyōgen, bunraku puppet theater, and kabuki, with some attention to modern theater. Texts of plays and secondary works on performance techniques and the composition of plays. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—Sorensen (change in existing course—eff. summer 15)

154. Japanese Literature on Film (4) Lecture/discussion—3 hours; film viewing—3 hours. Survey of films based on works of Japanese literature, emphasizing major films and early modern texts. Introduction to major directors of Japan, with a focus on cinematic adaptation. Lectures and readings in English. Films in Japanese with English subtitles. (Same course as Cinema and Technocultural Studies 148B). Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, VL, WC, WE.—Sorensen (change in existing course—eff. winter 16)

155. Japanese Women Writers (4) Lecture/discussion—4 hours. Survey of women writers from earliest times to the present. Genres include poetry, narrative fiction, diaries, short stories, novels, and film. Representative authors include Murasaki Shikibu, Sei Shōnagon, Higuchi Ichiyō, Enchi Fumiko and Ogawa Yōko. Readings and discussion in English. GE credit: ArtHum | AH, WC, WE.—I, II. Sorensen (change in existing course—eff. summer 15)

194H. Special Study for Honors Students (1-5) Independent Study—3-1.5 hours. Prerequisite: senior standing and qualification for the Japanese honors program; consent of instructor. Guided research, under the direction of a faculty member, leading to a senior honors thesis on a topic in Japanese literature, civilization, or language studies. May be repeated up to eight units for credit. (P/NP grading only) GE credit: ArtHum | AH, WC, WE.—F, W, S. (F, W, S.) (new course—eff. fall 14)

198. Directed Group Study (1-5) Prerequisite: consent of instructor. (P/NP grading only) GE credit: AH, WC, WE.—F, W, S. (F, W, S.) (change in existing course—eff. spring 16)

Graduate

291. Seminar in Modern Japanese Literature: Major Writers (4) Seminar—4 hours. Prerequisite: one of courses 130, 131, 132, 133, 134, 135, 136, 137, 138 or equivalent language proficiency. In-depth reading and critical analyses of major works by and critical literature on one or two prominent modern or contemporary writers such as Natsume Soseki, Mori Ogas, Shimazaki Toson, Akutagawa Rynosuke, Tanizaki Junichiro, Abe Kobo and Oe Kenzaburo. Offered in alternate years. Chu (change in existing course—eff. spring 16)

299. Research (1-12) Prerequisite: consent of instructor. (S/U grading only) (change in existing course—eff. spring 16)

Landscape Architecture

New and changed courses in Landscape Architecture (LDA)

Lower Division

30. History of Environmental Design (4) Lecture—3 hours; discussion—1 hour. History of Environmental Design across disciplines, including landscape architecture, planning, community and urban design. GE credit: ArtHum, Wrt | AH, VL, WC.—Sorensen (change in existing course—eff. winter 16)

140. Green Building, Design, and Materials (4) Lecture—2 hours; laboratory—4 hours. Prerequisite: course 21, 30, 50, 70. Restricted to Sustainable Environmental Design and Landscape Architecture majors only or with instructor permission. Sustainable design and construction techniques at site and building scales. Emphasizes real-world case studies, analysis of opportunities for actual sites, and application of LEED and Sustainable Sites green rating systems. GE credit: ArtHum or SciEng | AH or SE, VL, WC.—F, (F.) (change in existing course—eff. winter 16)

141. Community Participation and Design (4) Lecture—1 hours; laboratory—3 hours; fieldwork—3 hours; project—3 hours. Prerequisite: course 21, 30, 50, 70. Restricted to Sustainable Environmental Design and Landscape Architecture majors. Introduction to community participation and design. Incorporates social and cultural factors, public and community processes, theories and practices related to human-environment behavior; community involvement in design, social analysis, community engage-
ment, accessibility, diversity and politics of place. GE credit: ArHum, ArtHum | ACGH, AH or SS, DD, VL — W, WJ | McCutley (change in existing course—eff. winter 15)

161. Technology 3: Professional Practice and Construction Documents (4)
Studio — 8 hours. Prerequisite: courses 21, 23, 60 and 160. Open to Landscape Architecture majors only. Legal and professional aspects of landscape architecture, including the development of construction documents (drawings and specifications), proposal writing, fee calculations, project management, cost estimation, and insurance. — W (W) McCutley (change in existing course—eff. winter 15)

180N. Special Topics in Landscape Architecture: Planting Design (2)
Lecture — 2 hours. Prerequisite: upper division standing; Environmental Horticulture 6. Develop an understanding of the standing of the sensory, visual and functional importance of plants in the landscape. Visualization and design of planted landscapes. Development of planting plans. Not open for credit to students who have taken course 156. Offered in alternate years. — (change in existing course—eff. winter 15)

180P. Special Topics in Landscape Architecture: Water in Community Planning and Design (2)
Lecture — 2 hours. Prerequisite: course 50 or equivalent with consent of instructor. Upper division standing or above; priority given to Landscape Architecture majors. Theories, policies, methods, and resources related to the integration of water resources management with urban/community planning and landscape design including water use/demand, quality, treatment, conservation, and storm water drainage in alternate years. — (change in existing course—eff. winter 15)

181K. Social Factors in Landscape Architecture Design and Planning Studio (3)
Studio — 6 hours; one field trip required. Prerequisite: Psychology 155, course 170, 180K concurrently. Priority to Landscape Architecture majors. Application of design theory and methods to real-world projects. Familiarize students with the major concepts in environmental psychology as they relate to landscape architecture, to discuss the needs of various user groups, and post occupancy evaluations. Offered in alternate years. GE credit: DD, DL, VL — Owens (change in existing course—eff. winter 15)

193A. Senior Project in Landscape Architecture (3)
Studio — 6 hours. Prerequisite: senior standing in Landscape Architecture. Limited enrollment. Projects will focus on a critical area of landscape architectural design, planning, analysis, communication, or research. Required of all Landscape Architecture majors. (P/NP grading only.) — W, WJ (change in existing course—eff. winter 15)

193B. Senior Project in Landscape Architecture (4)
Studio — 8 hours. Prerequisite: course 193A and senior standing in Landscape Architecture. Limited enrollment. Projects will focus on a critical area of landscape architectural design, planning, analysis, communication, or research. Required of all Landscape Architecture majors. (P/NP grading only) — S, SS (change in existing course—eff. winter 15)

Graduate

202. Methods in Design and Landscape Research (4)
Seminar — 4 hours. Explores many of the research and advanced design and planning methods employed in landscape architecture. Exercises provide the student with a vehicle for designing independent landscape research and creative activities. Lectures provide an historical overview of research methodology. Offered in alternate years. — Owens (change in existing course—eff. spring 16)

205. Urban Planning and Design (4)
Lecture — 2 hours; discussion — 2 hours. Limited to graduate students. Regulation, design, and development of the built landscape, planning and land development processes, zoning and subdivision regulations, site planning, urban design goals and methods, public participation strategies, creatively designing landscapes to meet community and ecological goals. (Same course as Geography 233.) — F, FJ Wheeler (change in existing course—eff. winter 16)

215. Ecologies of Infrastructure (4)
Seminar — 4 hours. Open to graduate standing or consent of instructor. Focus on design practices and theory associated with ecological conceptions of infrastructure, including networked infrastructure, region, biodiversity, regionalization, ecological engineering, reconfiguration ecology, novel ecosystems, and theory/articulation of landscape change. Offered in alternate years. (Same course as Geography 215.) — Millington (new course—eff. winter 16)

220. Public Space and Culture (3)
(cancelled course—eff. spring 15)

230. Landscape and Memory (4)
(cancelled course—eff. spring 15)

Latin

New and changed courses in Latin (LAT)

2. Elementary Latin (5)
Lecture — 5 hours. Prerequisite: course 1 or equivalent. Continuation of course 1. GE credit: ArHum, ArtHum | AH, WJ, VR, Rundin (change in existing course—eff. spring 16)

3. Intermediate Latin (5)
Lecture — 5 hours. Prerequisite: course 2 or equivalent. Continuation of course 2. Selected readings from Latin authors. GE credit: ArHum, ArtHum | AH, S, S, S, S, Rundin (change in existing course—eff. spring 16)

Upper Division

100. Readings in Latin Prose (4)
Lecture/discussion — 4 hours. Prerequisite: course 3 or equivalent. Review of Latin morphology, grammar, and vocabulary. Readings in prose authors, including Julius Caesar. GE credit: AH, AH, Albu, Stem (change in existing course—eff. spring 15)

101. Livy (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum | AH, WJ, WE, F, F, W, S, S, S, Seal, Stem (change in existing course—eff. spring 16)

102. Roman Comedy (5)
Lecture — 4 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, WJ, AH, WJ, WE, F, W, S, S, S, Seal, Stem (change in existing course—eff. spring 16)

103. Vergil: Aeneid (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, Albu, Breinski, Seal (change in existing course—eff. spring 16)

104. Sallust (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. Offered in alternate years. GE credit: ArHum, ArtHum, AH, WJ, WE, S, S, Stem (change in existing course—eff. spring 16)

105. Catullus (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, ArtHum, AH, WJ, WE, F, F, W, S, S, S, Seal (change in existing course—eff. spring 16)

106. Horace: Odes and Epodes (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, W, S, S, Seal (change in existing course—eff. spring 16)

108. Horace: Satires and Epistles (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, AH, WJ, WE, F, F, S, S, S, Seal (change in existing course—eff. spring 16)

109. Roman Elegy (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, S, S, S, Seal (change in existing course—eff. spring 16)

110. Ovid (4)
Lecture/discussion — 3 hours; term paper. Prerequisite: course 100 or equivalent. Translation and discussion of selected readings from the works of Ovid. May be repeated one time for credit if topic differs and with consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, W, S, S, Seal (change in existing course—eff. spring 15)

112. Cicero (4)
Recitation — 3 hours; term paper. Prerequisite: course 100 or equivalent. Translation and discussion of selected readings from the works of Cicero. May be repeated one time for credit if readings vary and with consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, S, S, Seal (change in existing course—eff. spring 15)

115. Lucretius (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, W, S, S, Seal, Stem (change in existing course—eff. spring 15)

116. Vergil: Eclogues and Georgics (4)
Lecture — 3 hours; term paper. Prerequisite: course 100 or consent of instructor. GE credit: ArHum, ArtHum, AH, WJ, WE, F, F, S, S, S, Seal, Stem (change in existing course—eff. spring 16)

118. Roman Historians (4)
Lecture/discussion — 3 hours; term paper. Prerequisite: course 100 or equivalent. Readings in Latin from one or more of the major Roman historians and biographers. Authors may include Sallust, Nepos, Livy, Tacitus, Suetonius, and Ammianus Marcellinus. GE credit: ArHum, AH, WJ, WE, F, F, S, S, Seal, Stem (change in existing course—eff. spring 15)

119. Readings in Republican Latin Literature (4)
Lecture/discussion — 3 hours; term paper. Prerequisite: course 100 or equivalent. Translation and discussion of selected readings from Republican Latin literature. May be repeated for credit when topics vary. GE credit: ArHum, AH, WJ, WE, F, F, S, S, Stem (change in existing course—eff. spring 15)
Law

New and changed courses in Law

Graduate

200A. Introduction to the Law of the United States (2)
Discussion—2 hours. History and fundamental principles of the United States’s legal system. Important current legal issues, developments and trends. Required for LLM students who have not attended a U.S. law school. Fall semester only. (change in existing course—eff. fall 15)

200BT. Introduction to US Legal Methods (3)
Discussion—3 hours. Course is designed to provide background skills necessary to succeed in both law school and legal practice. Students gain an introductory working knowledge of the U.S. legal method which includes learning various forms of legal writing and speaking. (new course—eff. fall 15)

200CT. Patents, Patentable Subject Matter: Genes, Methods, and Software (2)
Seminar—2 hours. Prerequisite: course 274, 209A, 209AT. An in-depth look at recent cases and debates behind genetic patenting, software and business models; diagnostic methods, and others. Reviews the crucial and rapidly evolving field of patent law which affects some of the most important hi-tech industries. (new course—eff. spring 16)

209T. Innovation and Technology Transfer Seminar (2)
Seminar—2 hours. Prerequisite: course 209A or 274, recommended but not required. Restricted to 15 students. From biomedicine to clean tech, public institutions are playing leading roles in developing cutting-edge technologies. Explores the law and policy of publicly-supported innovation and technology transfer. (new course—eff. fall 10)

210. Criminal Justice Administration Seminar (2)
Seminar—2 hours. Limited enrollment. Compares U.S. criminal procedure with that of other countries, particularly the differing roles of the prosecutor, defense counsel, and the judge. (change in existing course—eff. winter 15)

210C. Sexual Assault and the Law (2)
Seminar—2 hours. Criminal law of sexual assault, traditional and modern offenses, and proposals for reform. Discussion of constitutional developments, victim’s counsel, evidentiary reform, and ADR. And the implications for civil law, tort liability, Title VI, Title IX, and civil liability of perpetrators. (new course—eff. fall 15)

211A. Advanced Negotiations Strategy and Client Counseling (3)
Discussion—3 hours. Prerequisite: consent of instructor. Application course; must apply and secure professor approval to enroll; will involve participating in discussions and a series of simulations; your class-mates will be counting on you to actively participate and be well prepared for every simulation; your class-mates will not apply to take this course unless you are willing and able to participate fully and can accept constructive feedback; if you anticipate missing more than two class sessions, do not apply to take this course because you will be asked to understand the dynamics of interviewing and counseling process. Designed to be relevant to a broad spectrum of negotiation problems that are faced by legal professionals. (change in existing course—eff. winter 15)

218. Constitutional Law II (4)
Discussion—4 hours. Not open to students who have completed course 218A or 218B. Principally covers the First Amendment and the Equal Protection Clause. (change in existing course—eff. winter 15)

218D. Constitutional Theory Seminar (2)
Seminar—2 hours. Provides students with a broad understanding of modern constitutional theory, and the ability to understand the implications of that theory for concrete historical and modern constitutional disputes. (new course—eff. fall 15)

218ET. California Constitutional Law (2)
Discussion—2 hours. Reviews, interpretive metarules for constitutional construction, structure and institutions of state government, civil liberties under the Declaration of Rights, the impact of race in California society, and criminal law. (new course—eff. fall 15)

219. Evidence (4)
Discussion—4 hours. Covers rules regarding the admissibility of testimonial and documentary proof during the trial of civil and criminal cases, including rules governing relevancy, hearsay, the examination and impeachment of witnesses, expert opinion, and constitutional and statutory privileges. (change in existing course—eff. spring 16)

220. Tax and Distributive Justice (3)
Discussion—3 hours. Advanced tax course designed to introduce students to tax policy, with particular emphasis on tax distribution (i.e., who or what should pay taxes in society) and tax incidence (i.e., who or what ends up paying taxes in society). (change in existing course—eff. spring 15)

222T. Asian Pacific Americans and Law (2)
Discussion—2 hours. Profound impact on how American Law has shaped Asian Pacific Americans, demographics, experiences, and possibilities of Asian Americans will be examined. (change in existing course—eff. spring 15)

223. Estate Planning Seminar (2)
Seminar—2 hours. Prerequisite: course 221 Limited enrollment. Selected topics in the estates and trusts area. Content varies with instructor; satisfies the advanced legal writing requirement. (change in existing course—eff. winter 15)

226. Disability Rights (3)
Discussion—3 hours. Examines disability law and theory with emphasis on U.S. statutory law (particularly, Americans with Disabilities Act, ADA Amendments Act, and Individuals with Disabilities Education Act) as it applies to employment, education, public accommodations, and government services and programs. (change in existing course—eff. fall 15)

228. Business Planning and Drafting (4)
Discussion—4 hours; extensive writing. Prerequisite: course 215; prerequisite will not be waived, do not register for the course unless you have completed course 215. Limited enrollment. Introduces students to a number of legal and business considerations relevant to forming and operating an emerging growth business (such as technology startup). (change in existing course—eff. fall 15)

229. Scientific Evidence (3)
Discussion—3 hours. Prerequisite: course 219. Limited enrollment. In addition to examining the evidence law governing the admission of scientific testimony, this course considers trial advocacy in presenting and attacking such testimony. (change in existing course—eff. winter 15)

231A. Sexual Orientation, Gender Identity, and the Law (3)
Discussion—3 hours. Examines the legal and social regulation of sexual orientation and gender identity. (change in existing course—eff. fall 15)

232AT. Real Estate Transactions (2)
Discussion—2 hours. Review of legal issues in the purchase, sale, financing of residential real estate in US, with non-exclusive focus on California. Roles of parties involved, mechanisms of financing and security, survey of remedies, and role of mortgage lending beginning in 2008. (new course—eff. spring 15)

237B. Special Topics in Legal Theory: Ancient Athenian Law (2)
Seminar—2 hours. Athenian legal system was different from our own and was far less formal. How did it work? Why did it work? Why have political and legal theorists misunderstood Athens for so long and what can we learn from that failure? (new course—eff. spring 16)

239. Mediation: Theory and Practice (3)
Discussion—3 hours. Prerequisite: course 211, 297. Restricted to 24 students. The basic, practical knowledge necessary to begin a mediation practice. Detai1ed understanding of the mediation process to counsel clients knowledgeably about the mediation option and represent clients in mediation. Communication skills, development of the ability to analyze disputes to understand why negotiations
succeed or fail, and understanding of the advantages and limitations of mediation as a method of resolving disputes. The stages of a mediation: contracting (establishing contact with the parties and explaining the process), developing the issues, working the conflict, resolving the conflict, and closure. (change in existing course—eff. winter 15)

240. Elections and Political Campaigns (2) Discussion—2 hours. Limited enrollment. Covers selected aspects of the stages of an election: primary elections; the role of campaign finance; the roles of the media and the Internet in elections; the impact of the Internet on the electoral process. (new course—eff. spring 15)

243BT. Introduction to Bankruptcy Law (2) Discussion—2 hours. Overview of US Bankruptcy Code and its interaction with State and federal non-bankruptcy law. Practice of bankruptcy law, and the impacts of bankruptcy and insolvency on resolution of non-bankruptcy litigation and structuring of real estate, commercial and corporate transactions. (new course—eff. spring 15)

245B. Death Penalty Seminar (2) Seminar—2 hours. Limited enrollment. Offers overview of the constitutional law governing the death penalty in the United States. (change in existing course—eff. winter 15)

247B. Corporate Tax (2) Discussion/laboratory—2 hours. Examination of the federal income tax relationship between corporations and their owners. Covers the transfer of funds into a corporation in formation and the re-transaction of money and property from the corporation to its shareholders. (change in existing course—eff. spring 16)

248A. Jurisdiction in Cyberspace Seminar (2) Seminar—2 hours. Limited enrollment. Review concepts in international law, conflicts of law, cyberlaw, and federal jurisdiction to address the growing multi-jurisdictional conflicts created by the Internet. Examine European efforts at crafting intra-Europe jurisdictional rules, as well as other international jurisdiction treaty projects such as those at the Hague. GE credit: Wrt. (change in existing course—eff. winter 15)

248BT. Human Rights in the Former Soviet Union: Legal Tools for Repression and Redress: Part II (2) Seminar—2 hours. This course first provides a historical context for the current political and human rights situation in the Former Soviet Union. It then analyzes the legal mechanisms and other strategies that some of the Former Soviet Union’s countries governments employ to repress their own citizens. Finally, the course examines the ways in which citizens use the law to seek relief from remedies for the repression of their rights. (change in existing course—eff. spring 11)

248CT. United Nations Human Rights Practicum (3) Discussion—3 hours. Students will engage in intensive research and writing in the field of cultural rights, the workings of the United Nations human rights system, and gain experience working with UN documents, individual cases in the field and with the UN Human Rights Office (new course—eff. spring 16)

248ET. Transitional Justice and Memory Politics in the Asia-Pacific (2) Seminar—2 hours. Transitional justice (legal responses to wrongdoings of repressive predecessor regimes) can help resolve “memory politics” that plague the relations and societies of many Asia-Pacific states. Together we will examine relevant roles of governments, novel institutions, the judiciary, and civil society. (new course—eff. spring 16)

248G. Legal Spanish for Lawyers (2) Seminar—2 hours. Prerequisite: must satisfy one of the following: undergraduate degree in Spanish; a minor in Spanish with experience living in a Spanish-speaking country; grew up in a Spanish-speaking household and able to pass an informal assessment by the instructor. Designed for law students who are native Spanish-speakers or who have achieved proficiency in Spanish through study or experiences in a Spanish-speaking country. (change in existing course—eff. spring 15)

248T. Advanced International Law (2) Discussion—2 hour. Review books of international law; Hugo Grotius and Judge Rosalyn Higgins. Themes include peaceful resolutions of dispute, law of war and peace, and international legal process. GE credit: WE (change in existing course—eff. spring 15)

248TA. Human Rights in Post Soviet Central Asia: Legal Tools For Repression and Redress (2) Discussion—2 hours. Limited enrollment. Provides a historical context for the current political and human rights situation in Central Asia. (new course—eff. fall 10)

250. Jurisprudence Seminar (3) Seminar—3 hours. Deals principally with the question of how judgments and cases, where the content of the law is in doubt and competing arguments have or could be offered for mutually inconsistent decisions in favor of either party. Limited enrollment. (change in existing course—eff. spring 15)

250AT. Legal Theory Workshop (2) Seminar—2 hours. Ask: Center. Introduction to research by legal academics and scholars. Students will write a publishable quality paper. Topics include race, citizenship, immigration, ethnicity or social justice. (change in existing course—eff. spring 15)

254A. Law and Rural Livelihoods Seminar (3) Seminar—3 hours. Provides broad overview of law as it relates and applies to rural people and places. (change in existing course—eff. fall 15)

254T. Practicum in Rural Community Advocacy (3) Seminar—3 hours. Limited enrollment. Provides an opportunity to learn about Participatory Action Research (PAN), small, community-based law-yering in the context of rural community development and advocacy. Using these skills and knowledge to serve rural California communities. (change in existing course—eff. spring 15)

258BT. Mindfulness and Professional Identity (3) Seminar—3 hours. Introduction to the practice of meditation and connect it with readings about the legal profession in three key areas. (change in existing course—eff. spring 15)

258DT. Setting Up and MaintainingSoloLawPractice(1)Lecture/discussion—1 hour. Introduction/overview of how to start a successful solo practice. (new course—eff. spring 16)

258ET. Utility of Law School and Careers in the Law (1) Discussion—1 hour. Despite improvements in the economy, some observers continue to question whether law school is a viable option for college graduates. The class will consider the controversy and expose students to the variety of careers in the legal profession. (S/U grading only) (new course—eff. spring 16)

259B. Women’s Human Rights (2) Seminar—2 hours. Overview of international legal and institutional system for the protection of women’s human rights from an academic perspective and the view of the practitioner. Includes the (CEDAW), violence against women, sexual and reproductive rights, economic rights, and more. (new course—eff. spring 16)

260A. Employment Law (3) Discussion—3 hours. Provides an overview of employment law, labor law and employment discrimination law and aims to serve as a foundation for understanding the law and policy (statutory and common law) that surround the employer-employee relationship. (new course—eff. spring 16)

260AT. Employment Law (2) (canceled course—eff. fall 16)

263A. Trial Practice I (3) Discussion—2 hours; laboratory—1 hour. Prerequisite: course 219, may be taken concurrently. Limited enrollment. Introduction to the preparation and trial of cases, featuring lectures, videotapes, demonstrations, assigned readings and forensic labs. Labora-tory held on Tuesday, Wednesday, and Thursday evening. (change in existing course—eff. winter 15)

264. Water Law (3) Discussion—3 hours. Property rights in surface waters, including riparian rights, prior appropriation, and public rights use of water bodies; environmental constraints on exercise of water rights; groundwater rights and management; federal allocation and control of water resources; legal aspects of interstate allocation. (change in existing course—eff. spring 16)

264A. Ocean and Coastal Law (3) Discussion—3 hours. Introduction to the goals and challenges of coastal and ocean policy; the complicated web of public and private interests in coastal lands and ocean waters; regulation of coastal development; domestic and international fisheries management; and preservation of ocean resources. (change in existing course—eff. spring 15)

265. Natural Resources Law Seminar (2) Seminar—2 hours. Prerequisite: course 285 or 256 recommended, but not required. Limited enrollment. In-depth coverage of two foundational principles of natural resources law: public trust doctrine and private property rights protected under the Takings Clause of the U.S. and many state constitutions. (change in existing course—eff. winter 15)

267B. Civil Rights Seminar (2) Seminar—2 hours. Limited enrollment. The social, political, legal and historical factors which led to the creation of the United States Civil Rights Act of 1964 (USCCR) in 1957. The United States Commis-sion on Civil Rights is a bipartisan, independent agency established by the Civil Rights Act. It is directed to investigate complaints alleging depriva-tions of the right to vote, and voter fraud; to study and collect information relating to discrimination and the denial of equal protection of the laws under the Constitution on the basis of race, color, religion, sex, age, disability, or national origin; and submit reports, findings and recommendations to the President and to Congress. The role that the USCCR has
280. Advanced Legal Writing: Analytical & Persuasive Writing (3)
Seminar—2 hours. Prerequisite: consent of instructor. Develop essay writing skills and performance test drafting typically employed on the bar examination. (S/U grading only)
(change in existing course—eff. spring 15)

281. State and Local Government Law (3)
Discussion—3 hours. Broad approach to state and local government law both practically and theoretically. Topics include: federalism, relations between states and localities, governmental liability, zoning, educational equity and public finance.
(change in existing course—eff. fall 15)

285. Environmental Law (4)
Discussion—4 hours. Introduction to environmental law, focusing primarily on federal law.
(new course—eff. fall 14)

285A. California Environmental Issues (2)
Discussion—2 hours. The "statehood" of California has for many years been a national and global leader in environmental law and policy. Survey of key California environmental law and policy issues.
(change in existing course—eff. fall 14)

285B. Environmental Practice (2)
Discussion—2 hours. Prerequisite: course 285 recommended. Examines underlying theory and practice in securing compliance with our major environmental laws.
(change in existing course—eff. spring 16)

285C. The Business of Lawyering (2)
Discussion—2 hours. Desired outcome is a thorough understanding of the business side of law practice and to promote an understanding of the relationship and balance between legal skills, business requirements of a practice, client needs and a work life balance.
(new course—eff. fall 15)

285H. Comparative Environmental Law (2)
Seminar—2 hours. Focus on Pacific Rim, examining factors, similarities/differences in countries environmental regulation and success of environmental law. Including international, comparative and policy approaches; compliance and enforcement gaps; citizen and community mobilization; the role of legal institutions; variations in regulatory style.
(new course—eff. spring 15)

286A. Bioethics (3)
Discussion—3 hours. Limited enrollment. Course examines the ethical and legal issues that arise from biomedical research and use of medical technologies. GE credit: Wrt.
(change in existing course—eff. winter 15)

286C. Genetics (3)
Discussion—3 hours. Limited enrollment. Course examines a variety of laws and policies that affect reproductive health and procreative decision making.
(change in existing course—eff. winter 15)

287. Public Land Law (2)
Discussion—2 hours. Legal aspects of federal land management, including the history of public land law, the scope of federal and state authority over the federal lands, and the allocation of public land resources among competing uses, including extractive consumption, recreation, and preservation.
(change in existing course—eff. fall 15)

287A. Poverty Law (2)
Seminar—2 hours. Limited enrollment. Explore the theory and practice of law pertaining to the enactment and enforcement of laws regulating or aiding the poor and other disadvantaged persons.
(change in existing course—eff. fall 15)

287T. Law and Society Seminar (2)
Seminar—2 hours. Limited enrollment. Study of law and society challenges to traditional legal scholarship by exploring multiple ways in which law both shapes and is shaped by societies and social interactions. Seminar will introduce students to important literature and debates in the field.
(change in existing course—eff. winter 15)

288. Advanced Constitutional Law Seminar (2)
Seminar—2 hours. Prerequisite: Prior or concurrent enrollment in course 218 or 218A. Limited enrollment. Explores in-depth selected topics or problems in constitutional law and theory. Current focus is on the interpretation and application of the religion clauses of the First Amendment.
(change in existing course—eff. winter 15)

288B. Supreme Court Simulacrum Seminar (2)
Seminar—2 hours. Limited enrollment. Consideration in depth of approximately nine cases involving constitutional law that will be decided during the present term of the U.S. Supreme Court.
(change in existing course—eff. winter 15)

289A. Biotechnology Law and Policy (2)
Seminar—2 hours. Limited enrollment. Coverage includes the regulation of biotechnology research, including restrictions on cloning and fetal stem cell research; regulation of the products of biotechnology to protect human health or the environment, including restrictions on use or distribution of genetically modified organisms; the availability and scope of intellectual property protection for biotechnology products, including genes and engineered organisms; and the international law governing access to the natural resources that provide the starting materials for biotechnology and trade in bioengineered organisms or their products.
(change in existing course—eff. winter 15)

290AT. Privacy, Surveillance, and "Sousveillance" (3)
Discussion—3 hours. Issues of privacy and surveillance are important to businesses, governments and citizens. Surveillance raises issues of autonomy and the abuse of power. "Sousveillance," (citizen holds the camera), is a mechanism for rooting out corruption and exposing individuals to societal scrutiny.
(new course—eff. fall 15)

290BT. Surveillance and State (3)
Seminar—3 hours. Examines the tensions between democracy and the rise of government power entailed by the growth of state surveillance. United States surveillance law and practice, and surveillance law and practice across the world. Also considers international legal constraints on government surveillance.
(new course—eff. spring 16)

295A. Trademark and Unfair Competition Law (2)
Discussion—2 hours. Prerequisite: course 274 recommended, not required. Intensive look at selected issues in Trademark Law, including the concepts of trademarks and unfair competition, acquisition and
loss of trademark rights, infringement, trademarks as speech, and international aspects of trademark protection.

296. Copyright (3)  Discussion—3 hours. Thorough examination of the law of copyright, including its application to literature, music, films, television, art, computer programs, and the Internet.

297. Alternative Dispute Resolution (3)  Discussion—3 hours. Limited enrollment. Introduces students to a wide variety of alternative dispute resolution procedures, with an emphasis on negotiation, mediation and arbitration.

297A. Federal Arbitration Act Seminar (2)  Seminar—2 hours. Trace the development of commercial arbitration law, with a special emphasis on hot button contemporary issues like consumer and employment arbitration, the separability doctrine, preemption of state law, and the arbitrability of statutory claims.

297AT. Commercial Arbitration Seminar (2)  (canceled course—eff. fall 15)


(new course—eff. spring 15)


(professional)

298B. Alternative Dispute Resolution (3)  Discussion—3 hours. Limited enrollment. Introduces students to a wide variety of alternative dispute resolution procedures, with an emphasis on negotiation, mediation and arbitration.


(new course—eff. spring 15)


(change in existing course—eff. winter 15)

Professional

400A. Educational Policy and the Law Seminar (2)  Seminarclinic—3 hours. Limited enrollment. Trains students to educate the community about basic legal rights and responsibilities. Students attend an initial four-hour orientation, followed by weekly seminars that will prepare students to teach in a local high school at least two times per week. Paper or journal required, to be determined by instructor. (S/U grading only.)

(change in existing course—eff. winter 15)

400A. Educational Policy and the Law Seminar (2)  Seminarclinic—3 hours. Limited enrollment. Trains students to educate the community about basic legal rights and responsibilities. Students attend an initial four-hour orientation, followed by weekly seminars that will prepare students to teach in a local high school at least two times per week. Paper or journal required, to be determined by instructor. (S/U grading only.)

(change in existing course—eff. winter 15)

400B. Community Education Seminar (2)  Seminar—2 hours. Limited enrollment. Comprehensive look at the organization, operation, and ideology of the legal profession.

(change in existing course—eff. summer 15)

410A. Appellate Advocacy I (2)  Discussion/laboratory. Limited enrollment. Basic appellate practice and procedure. Beginning instruction in oral advocacy skills and an opportunity to practice these skills in front of a moot court. (S/U grading only.)

(change in existing course—eff. winter 15)

410B. Appellate Advocacy II (Moot Court) (2)  Practice—2 hours. Limited enrollment. Continuation of course 410A. Focuses on the development of effective opening brief writing skills and the refinement of oral advocacy skills. (S/U grading only.)

(change in existing course—eff. winter 15)

412. Carr Intrahash School Trial Advocacy Competition (1)  Lecture. Limited enrollment. Named after the late Justice Frances Carr, this competition is open to second- and third-year students. A preliminary round is followed by quarterfinals, semifinals, and a final round. Students participate in moot trials presided over by judges and critiqued by experienced litigators. (S/U grading only.)

(change in existing course—eff. winter 15)

414. Moot Court Board (1)  Prerequisite: courses 410A-410B. Limited enrollment. Members of Moot Court Board may receive one credit for each semester of service on the board, up to a maximum of two. Credit awarded only after certification by Moot Court Board and approval of the faculty advisors to Moot Court Board. (S/U grading only.)

(change in existing course—eff. winter 15)

417A. Law Review Editor (1-2)  Prerequisite: consent of instructor. Editors must have completed an editorship article and must perform editorial duties (a substantial time commitment). Credit is awarded only after completion of both semesters. (S/U grading only; deferred grading only, pending completion of sequence.)

(new course—eff. spring 15)

417B. Law Review Editor (1-2)  Prerequisite: consent of instructor. Editors must have completed an editorship article and must perform editorial duties (a substantial time commitment). Credit is awarded only after completion of both semesters. (S/U grading only; deferred grading only, pending completion of sequence.)

(new course—eff. fall 15)

420. Civil Rights Clinic (2-6)  Clinical activity—2 hours. Prerequisite: prior or current enrollment in course 219; priority given to students enrolled in or have taken course 267; consent of instructor. Limited enrollment. Clinic provides practical experience in providing legal services to indigent clients who have filled civil rights actions in state and federal trial and appellate courts. Students work on clinic cases under the supervision of the clinic director. May be repeated for credit.

(change in existing course—eff. spring 15)

435B. Family Protection Clinic (4)  Clinical activity—2 hours. Prerequisite: Full-Year Clinic: prior or concurrent enrollment in course 219 to qualify for state court certification; prior or concurrent enrollment in courses 272 and 263A recommended but not required; consent of instructor. Full-Year Clinic: each student required to enroll for two semesters receiving four units each semester for total of eight units; class limited to seven students. Represents low-income persons in family law and related matters arising out of situations involving family violence. (Deferred grading only, pending completion of sequence.)

(new course—eff. fall 14)

435B. Family Protection Clinic (4)  Clinical activity—2 hours. Prerequisite: Full-Year Clinic: prior or concurrent enrollment in course 219 to qualify for state court certification; prior or concurrent enrollment in courses 272 and 263A recommended but not required; consent of instructor. Full-Year Clinic: each student required to enroll for two semesters receiving four units each semester for total of eight units; class limited to seven students. Represents low-income persons in family law and related matters arising out of situations involving family violence. (Deferred grading only, pending completion of sequence.)

(new course—eff. spring 15)

440. Immigration Low Clinic (4)  Clinical activity—4 hours. Prerequisite: prior or current enrollment in course 292. Each student is required to enroll for two semesters, receiving four units each semester for total of eight units. Provides legal representation to indigent non-citizens in removal proceedings before U.S. Immigration Courts, the Board of Immigration Appeals, and federal courts, including the Ninth Circuit Court of Appeals. (Deferred grading only, pending completion of sequence.)

(change in existing course—eff. winter 15)

440A. Immigration Law Clinic (4)  Clinical activity—4 hours. Prerequisite: prior or current enrollment in course 292. Each student is required to enroll for two semesters, receiving four units each semester for total of eight units. Provides legal representation to indigent non-citizens in removal proceedings before U.S. Immigration Courts, the Board of Immigration Appeals, and federal courts, including the Ninth Circuit Court of Appeals. (Deferred grading only, pending completion of sequence.)

(change in existing course—eff. spring 15)

440B. Immigration Law Clinic (4)  Clinical activity—4 hours. Prerequisite: prior or current enrollment in course 292; consent of instructor. Each student is required to enroll for two semesters, receiving four units each semester for total of eight units. Provides legal representation to indigent non-citizens in removal proceedings before U.S. Immigration Courts, the Board of Immigration Appeals, and federal courts, including the Ninth Circuit Court of Appeals. (Deferred grading only, pending completion of sequence.)

(change in existing course—eff. spring 15)

470. Administration of Criminal Justice Externship (2-12)  Clinical activity—2-12 hours. Prerequisite: completion of, or concurrent enrollment, in courses 219 and 272; course 263A recommended. Limited enrollment. Gain practical experience working full or part time in a District Attorney’s or Public Defender’s office in one of several surrounding counties or in a federal Public Defender or U.S. Attorney’s office. Students participate in the many activities associated with the office for which they extern: observation, interviewing, research, counseling, motion practice, and trials under state Bar rules. Students participate in the many activities associated with the office for which they extern: observa-

(change in existing course—eff. winter 15)

480. Clinical Program in Prison Law (2-6)  Clinical activity—2 hours. Prerequisite: consent of instructor. Provides practical experience in providing legal services to real clients who have various problems related to their incarceration in state prison. The
services require analysis and application of Constitutional law, state statutory law, agency regulations, and the rules of professional responsibility.

(change in existing course—eff. spring 15)

4985. Group Study (1-4)

(canceled course—eff. summer 15)

Linguistics

New and changed courses in Linguistics (LIN)

Lower Division

15. Academic Oral Communication (3)
Lecture—1 hour; discussion—2 hours. Structure of oral language and the role of the listener in the communication transaction in classroom discourse in American English and in cross-cultural perspective. GE credit: ArtHum or SocSci | AH or SS, QL—F, W, Su, F, W, Su | Farrell
(new course—eff. fall 14)

20. Oral English for Undergraduate ESL Students (3)
Lecture/discussion—3 hours. Open to non-native speakers of English with priority enrollment to international and domestic students with a minimum TOEFL score of 500. GE credit: ArtHum or SocSci | AH or SS, QL—F, W, Su, F, W, Su | Farrell

24. English Structures and Strategies in Academic Writing (4)
Lecture/discussion—4 hours. Prerequisite: course 23. Open to students from language backgrounds other than English. Designed to help students improve their English writing skills for successful academic study. GE credit: ArtHum or SocSci | AH or SS, QL, VL—F, W, Su, F, W, Su | Farrell

25. English for International/ESL Graduate Students (4)
Lecture/discussion—4 hours. Prerequisite: admission by placement examination or consent of coordinator. Open to international and graduate students and limited status international undergraduates (Educ Abroad Program participants). Multi-skills ESL course designed to help students improve their English language skills for successful academic study. GE credit: ArtHum or SocSci | AH or SS, QL, VL—F, W, Su, F, W, Su | Farrell

182. Multilingualism (4)
Lecture/discussion—4 hours. Limited enrollment. Issues in multilingualism from a global perspective: e.g., multilingual communities; multilingualism and identity (gender, ethnicity, nationality); language ideologies and educational and sociopolitical policies surrounding multilingualism; acquisition of multilingualism; discursive practices of multilinguals. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC, WE | S. Ramanathan, Timman

183. Language, Power, and Society (4)
Seminar—2 hours, term paper. Prerequisite: consent of instructor. Analysis of power in linguistic communities. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

Graduate

205A. Topics in Linguistic Theory and Methods (4)
Seminar—3 hours, term paper. Prerequisite: consent of instructor. Advanced study of current problems in linguistic theory and methodology. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

205B. Topics in Linguistic Theory and Methods (4)
Seminar—3 hours, term paper. Prerequisite: consent of instructor. Advanced study of current problems in linguistic theory and methodology. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

205C. Topics in Linguistic Theory and Methods (4)
Seminar—3 hours, term paper. Prerequisite: consent of instructor. Advanced study of current problems in linguistic theory and methodology. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

205D. Topics in Linguistic Theory and Methods (4)
Seminar—3 hours, term paper. Prerequisite: consent of instructor. Advanced study of current problems in linguistic theory and methodology. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

265. Language, Performance, and Power (4)
Seminar—3 hours, term paper. Restricted to graduate students. GE credit: ArtHum or SocSci, Div, Wrt | SS, WE, WC | J. L. D. Bicknell, Fleischhacker

Management

New and changed courses in Management (MGT/MGB/MGP)

Upper Division

110A. Elementary Accounting (4)

110B. Elementary Accounting (4)

111A. Financial Accounting (3)

111B. Financial Accounting (3)

Pre-Fall 2011 General Education (GE): ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Domestic Diversity; Wrt=Writing Experience
Fall 2011 and on Revised General Education (GE): HsSci=Humanities; Sci=Science and Engineering; SS=Social Sciences; ACH=American Cultures; DD=Domestic Diversity; OL=Oral Skills; QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience
Quarter Offered: F=Fall, W=Winter, S=Spring, Su=Summer; 2015-2016 offering in parentheses
200A. Financial Accounting (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Introduction to the concepts and objectives underlying the preparation of financial statements. Topics include understanding the accounting cycle, measurement and valuation problems associated with financial statement components, consideration of the usefulness of financial statements in the analysis of a corporation’s operations.—F. (F) Yetman (change in existing course—eff. spring 15)

200B. Managerial Accounting (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Information managers should know to be effective, including: product costing, motivating people, and differential analysis for decision making. Includes team projects and written and oral presentations.—W., Su. (W., Su.) Ramamurthy (change in existing course—eff. spring 15)

21A. The Individual and Group Dynamics (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Examines basic psychological and social psychological processes shaping behavior and applies knowledge of these processes to the following organizational problems: motivation, job design, commitment, socialization, culture, individual and group decision making, and team building.—F. (F) Elbashir (change in existing course—eff. spring 15)

2018. Organizational Structure and Strategy (3)
Lecture/discussion—3 hours. Prerequisite: completion of first year courses in Graduate School of Management or equivalent. Open to MBA students only. Study of organizations, including analysis of industries, firms resources and capabilities and corporate strategy. Strategy formulation, implementation and strategy decision-making in industry life cycles and change. Analysis of organizational design and structure including differentiation and integration.—F. (F) Dokko (change in existing course—eff. spring 15)

202A. Markets and the Firm (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Examines the interactions of firms and government, and the effect this interaction has on the use of resources and firm profitability. Fundamental economic concepts such as marginal analysis, opportunity cost, pricing, and externalities are introduced and applied.—W. (W) (change in existing course—eff. spring 15)

202B. Business, Government, and the International Economy (3)
Lecture—3 hours. Prerequisite: course 202A. Examines the influence of government and international factors on business. Topics include distribution of income, business cycles, inflation and interest rates, the federal debt, monetary policy and international trade and finance.—W. (W) (change in existing course—eff. spring 15)

203A. Data Analysis for Managers (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management MBA program or consent of instructor. Introduction to statistics and data analysis for managerial decision making. Descriptive statistics, principles of data collection, sampling, and hypothesis testing. Application of data analytic methods to problems in marketing, finance, accounting, production, operations, and public policy.—W. (W) Tsai (change in existing course—eff. spring 15)

203B. Forecasting and Managerial Research Methods (3)
Lecture—2 hours. Prerequisite: course 203A. Practical statistical methods for managerial decision making covers regression analysis, time series analysis and forecasting, design and analysis of experiments in managerial research and contingency table analysis. Application of these methods to marketing, finance, accounting, production, operations, and public policy.—W. (W) Tsai (change in existing course—eff. spring 15)

204. Marketing Management (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Corporate financial policy and investment analysis. Analysis of market opportunities, elements of market research, development of marketing strategies, market planning and implementations, and control systems. Consumer and industrial market segmentation, pricing strategies, distribution channels, promotion, and sales.—S. (S.) Barber (change in existing course—eff. spring 15)

205. Financial Theory and Policy (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. Corporate financial policy and investment analysis. Covers capital budgeting, optimal financial structure, cost-of-capital determination, risk measurement. Develops basic valuation principles for investments with long-lived and risky cash flows, and extends these to diversified securities, asset portfolios, investment management and hedging.—S. (S.) Barber (change in existing course—eff. spring 15)

206. Decision Making and Management Science (3)
Lecture—3 hours. Prerequisite: graduate student in the Graduate School of Management. MBA program or consent of instructor. Develops decision-making and problem-solving skills in conjunction with a quantitative model-building approach. Emphasizes how structured modeling techniques, probability forecasts, simulations and computer optimization models are used in the overall process of making decisions in an uncertain environment.—W. (W) (change in existing course—eff. spring 15)

207. Management Information Systems (3)
Lecture—3 hours. Prerequisite: graduate student or consent of instructor. Introduction to computer programming and decision making skills. Use of computer in organizations, emphasis on managerial aspects of computing. Standard and nonstandard uses of data files, centralization versus decentralization of computing, office, and data security.—F, W, S. (F, W., S.) Bhargava, Woodruff (change in existing course—eff. spring 15)

215. Business Law (3)
Lecture—3 hours. Prerequisite: completion of Administration core requirements or petition with consent of instructor. Introduction to law and legal process in the United States. Sources of law, structure and operation of courts, federal-state relationships, fundamentals of administrative law, fundamentals of business law.—S. (S.) (change in existing course—eff. spring 15)

216. Managing Professionals, Budgets, Controls and Ethics (3)
Lecture—3 hours. Prerequisite: graduate standing. Performance measures, budgetary controls and ethical pressures which occur at middle management levels in service-type operations. Addresses such organizations as computer support, medical groups, law offices, management consultants.—F. (F) Suran (change in existing course—eff. spring 15)

217. The Business of Politics (3)
Lecture—3 hours. Class size limited to 30 students. Covers the role of business and business leaders as policy and political actors at the federal, state, and local level, including government relations programs, regulation of business by government, political campaigns, and policy as a business advantage.—W. (W.) Smith (change in existing course—eff. spring 15)

220. Management of Social Networks (3)
Lecture/discussion—3 hours. Prerequisite: course 201A. Open to MBA students only. Principles and applications of social network theory: coordinating divergent interests to create value for individuals and organizations. Emphasis on conceptual models, web-based diagnostic tools, and practical applications.—F. (F) (change in existing course—eff. spring 15)

223. Power and Influence in Management (3)
Seminar—3 hours. Prerequisite: consent of instructor. Investigation of the bases of power in organizations and the tactics used to translate power into influence. Topics include the control of resources (including information), social psychological processes (including commitment), the construction of meaning, and ethics.—F. (F) Palmer (change in existing course—eff. spring 15)

224. Managing Human Resources (3)
Lecture/discussion—3 hours. Open to MBA students only. Restricted to MBA students only. Explore choices firms make in managing workers-decisions as to wages, benefits, working conditions, and other management policies and practices. Analyze employment systems’ fit with firms’ environments and strategies, and the consequences of choices managers make regarding policies and practices. Not open to students who have taken MGT 224 or MGP 224.—W., (W., Su.) Hsu (change in existing course—eff. winter 16)

234. Pricing (3)
Lecture/discussion—3 hours. Prerequisite: completion of first year core courses at the Graduate School of Management or equivalent, including courses 202A & 203B. Restricted to MBA students only. Course equips students for a career in digital marketing and social media. Topics include online advertising, search engine optimization, interactive media, online privacy issues, e-commerce, social influence, social network theory, measurement of social influence, integrating social and traditional media.—S. (S.) Yoganarasimhan (change in existing course—eff. spring 15)

239. Digital Marketing (3)
Lecture/discussion—3 hours. Prerequisite: course 204. Course equips students for a career in digital marketing and social media. Topics include online advertising, search engine optimization, interactive media, online privacy issues, e-commerce, social influence, social network theory, measurement of social influence, integrating social and traditional media.—S. (S.) Yoganarasimhan (change in existing course—eff. spring 15)

240. Management Policy and Strategy (3)
Lecture—3 hours. Prerequisite: first-year core courses of M.B.A. program. Examines the scope of missions, objectives strategies, policies, structures, measurements and incentives which bear on the management of an organization. Real client organizations, in-advance.—W., Su. (W., Su.) Suran (change in existing course—eff. spring 15)

241. New Product Development (3)
Lecture/discussion—3 hours. Prerequisite: course 249 or consent of instructor. Open to graduate students in the Graduate School of Management. State-of-the-art concepts and methods to enhance the effectiveness of new product development activities. Focuses on the understanding of managerial issues and acquiring the ability to solve problems.—S. (S.) Naik, Prasad (change in existing course—eff. spring 15)
242. Marketing Communications (3)
Lecture—3 hours. Issues in designing a marketing communications strategy. Topics include mass and direct communications, institutional aspects of advertising, consumer behavior, evaluating ad effectiveness, determining ad budget, creative strategy, and use and abuses of communications. — S. (S.) Naik, Prasad (change in existing course—eff. spring 15)

243. Customer Relationship Management (3)
Lecture/discussion—3 hours. Prerequisite: completion of first-year core courses at the Graduate School of Management or the equivalent. Restricted to MBA students only. Customer Relationship Management (CRM) is a management approach under which marketing activities are organized and measured around customers (rather than around brands.) This approach emphasizes building relationships with customers, not brands, are those who make buying decisions. — F. (F.) Aravindakshan (change in existing course—eff. spring 15)

244. New and Small Business Ventures (3)
Lecture—3 hours. Emphasizes starting a new business venture or managing a small, ongoing business during its formative years. The business plan, legal forms, financial considerations, the management team. The entrepreneur. Students develop a detailed business plan. — Su. (Su.)

245. Business Writing (3)
Lecture/discussion—3 hours. Prerequisite: completion of first-year core courses at the Graduate School of Management or the equivalent. Restricted to MBA students only. Techniques for sharpening writing skills are introduced, along with grammatical structure, word choice, and punctuation. Learn to develop styles that are pitch-perfect for given situations and to think strategically about each communication challenge in a management setting. — S. (S.)

246. Negotiation and Team Building (3)
Lecture/discussion—3 hours. Prerequisite: courses 202, 205. Basic theory of negotiation; applies theory to process of building teams to achieve business purposes. Covers integrative and distributive strategies of claiming value, how to recognize bargaining tricks, uncovering hidden agendas, brainstorming to extend Pareto frontier. — W. (W.) W. S. Sui, F. W. (W. S. Sui) (change in existing course—eff. spring 15)

247. Customer Service as a Marketing Tool (3)
Lecture—3 hours. Understanding the distinct features of services, how to create value through service, methods of building strong relationships with customers, retaining and building customer satisfaction, and measuring the financial impact of service improvement. — F. (F.)

248. Marketing Strategies (3)
Lecture—3 hours. Examines process by which organizations develop strategic marketing plans. Includes definition of activities and products, marketing audits, appraising market opportunities, design of new activities and products, and organizing marketing planning function. Applications to problems in private and public sector marketing. — W. (W.) Olivier, Ruel (change in existing course—eff. spring 15)

249. Marketing Research (3)
Lecture—3 hours. Course addresses the managerial issues and problems of systematically gathering and analyzing information for making private and public marketing decisions. Covers the cost and value of information, research design, information collection, measuring instruments, data analysis, and marketing research applications. — B. (B.) Bunch (change in existing course—eff. spring 15)

250. Technology, Competition, and Strategy (3)
Lecture—3 hours. Prerequisite: completion of first-year core courses at the Graduate School of Management or the equivalent. Restricted to students in the MBA program. The MBA program is typically so defective? Why do so many firms in the IT industry give away their best products free? This course helps you analyze questions like these by modeling competition and strategy in the network, technology, and information industries. — W. (W.) Bhagavat (change in existing course—eff. spring 15)

251. Management of Innovation (3)
Lecture—3 hours. Managing innovative enterprise in changing and uncertain environments. Covers technology forecasting and assessment, program selection and control, financial management, regulation, and ethics. — F. (F.) Biggert (change in existing course—eff. spring 15)

252. Managing for Operational Excellence (3)
Lecture—3 hours. Open to students in the Graduate School of Management. Explores the management of operations, and the interface between other functions as services are provided both inside and outside the organization. Develop an understanding of how uncertainty affects planning and delivery by looking at fundamental models of operations. — Su. (Su.) Wood- ruff (change in existing course—eff. spring 15)

258. Mergers and Acquisitions (3)
Lecture—3 hours. Course focuses on the market for corporate acquisitions and restructuring activity. Topics include: sources of value creation, takeovers, anti-takeover provisions, bidding strategies, use of leverage in buyouts, regulatory risk and hurdles, and, valuation approaches for highly leveraged transactions. — S. (S.) Marquez (change in existing course—eff. spring 15)

260. Corporate Finance (3)
Lecture—3 hours. Focuses on planning, acquiring, and managing a company’s financial resources. Includes capital structure, long-term financing, debt and equity instruments, and other forms of reorganization; analysis of investment, financial, and dividend policy; and theories of optimal capital structure. — S. (S.) Scherbina (change in existing course—eff. spring 15)

261. Investment Analysis (3)
Lecture—3 hours. Examines asset pricing theories and relevant evidence, including the investment performance of stocks and bonds. Topics include the efficiency of markets, domestic and international portfolio diversification, factors influencing the value of stocks and other investments, and portfolio management and performance. — F. (F.) Chen (change in existing course—eff. spring 15)

262. Money and Security Markets (3)
Lecture—3 hours. Examines how money and securities markets are organized, how public agencies, businesses, others obtain and invest funds in those markets. Relations between interest rates, monetary policy, government’s role in improving capital markets, approaches to assessing changes in regulation of specific markets. — F. (F.) (change in existing course—eff. spring 15)

263. Derivative Securities (3)
Lecture/discussion—3 hours. Open to students enrolled in the MBA program. Behavior of options, futures, and other derivative securities markets and how public agencies, business and others use those markets. Trading strategies involving options, swaps, and financial futures contracts. Pricing of derivative securities, primarily by arbitrage methods. — S. (S.) Edel (change in existing course—eff. spring 15)

264. Business Taxation (3)
Lecture—3 hours. Analysis of the impact of business taxation on investment, production, and finance decisions. Discussion of the relationship between business organization and tax liability. Course is not intended for tax specialists. — W. (W.) Yetman (change in existing course—eff. spring 15)

265. Venture Capital and the Finance of Innovation (3)
Lecture/discussion—3 hours. Prerequisite: completion of first-year core courses at the Graduate School of Management or the equivalent. Restricted to students in the MBA program. Examines venture capital finance and the related practice of R&D finance. Goal is to apply finance tools and framework to the world of venture capital and financing of projects in high-growth industries. — W. (W.) Yasuda (change in existing course—eff. spring 15)

266. International Finance (3)
Lecture—3 hours. Prerequisite: course 207 or the equivalent. Studies fixed and floating exchange-rate systems. Topics include determinants of a nation’s balance of international payments; macroeconomic interdependence of national and international economies; exchange-rate regimes and its implications for domestic stabilization policies; and the international coordination of monetary and stabilization policies. — W. (W.)

267. Teams and Technology (3)
Lecture/discussion—3 hours. Prerequisite: consent of instructor. Restricted to working professional MBA students. Theory and practice of managing teams with primary goals of: providing conceptual guidelines for analyzing and diagnosing group dynamics and determining strategic options as a manager; imparting interpersonal skills for implementing effective strategies; understanding how technological change affects team processes. — S. (S.) Beckly (change in existing course—eff. spring 15)

268. Articulation and Critical Thinking (3)
Laboratory/discussion—3 hours. With commitment to this course, students will become competent professional writers in the MBA program. Data is a key source of intelligence and competitive advantage for business organizations. With the explosion of electronic data available to organizations and demand for better and faster decisions, the need for information intelligence is becoming central in organizations. — S. (S.) Yang (change in existing course—eff. spring 15)

269. Business Intelligence Technologies—Data Mining (3)
Lecture/discussion—3 hours. Prerequisite: completion of core courses at the Graduate School of Management or the equivalent. Restricted to students in the MBA program. Data is a key source of intelligence and competitive advantage for business organizations. With the explosion of electronic data available to organizations and demand for better and faster decisions, the need for information intelligence is becoming central in organizations. — S. (S.) Yang (change in existing course—eff. spring 15)

270. Corporate Financial Reporting (3)
Lecture—3 hours. Analyzes and evaluates contemporary issues in financial reporting and develops implications of those issues for business decision makers, investment managers, and others. — W. (W.) Yetman, F. (F.) Griffin (change in existing course—eff. spring 15)

271. Strategic Cost Management (3)
Laboratory/discussion—3 hours. Restricted to students in the MBA program. Theoretical frameworks and associated techniques for using organizational
design and cost management to achieve a sustainable, profitable cost structure. Topics include: target costing, process goals, total cost of ownership, cost of customers, implementing structural change, and incentives. — S. (S.) Anderson (change in existing course—eff. spring 15)

272. Evaluation of Financial Information (3)
Lecture—3 hours. Studies how investors, creditors, others use accounting and other information in making rational investment, lending decisions. Emphasis is placed on the analysis of financial information in a variety of contexts. Where applicable, recent research in finance and economics is discussed. — S. (S.) Griffin (change in existing course—eff. spring 15)

273. Accounting and Reporting for Government Nonprofit Entities (3)
Lecture—3 hours. Concepts, methods, and uses of accounting and financial reporting by governmental and nonprofit entities. Introduction to budgeting and performance evaluation, and accounting for entities such as hospitals, universities, and welfare agencies. — S. (S.) (change in existing course—eff. spring 15)

274. Corporate Governance (3)
Lecture—3 hours. Prerequisite: restricted to full-time MBA students or consent of instructor. Discusses how corporations operate in the interests of shareholders and public. Directly relevant to managers, consultants in compensation and incentives, staff working on mergers and acquisitions, corporate regulators, shareholder rights activists, and board members. — S. F. F. (S.) (change in existing course—eff. spring 15)

276. Real Estate, Finance and Development (3)
Lecture—3 hours. Focus on single family, attached-detached, multifamily, and light commercial development. Students will study factors which make up successful real estate development. Course will consider financial aspects involved in land acquisition, land development, construction, and project lending. — W. (W.) (change in existing course—eff. spring 15)

281. Systems Analysis and Design (3)
Lecture—3 hours. Design and specification of computer-based information systems. Applications systems development life cycle, use requirements and feasibility assessment, logical and physical design, program development and testing, conversion and implementation. — W. (W.) (change in existing course—eff. spring 15)

282. Supply Chain Management (3)
Lecture/design—3 hours. Prerequisite: completion of first year core courses at the Graduate School of Management or the equivalent. Introduction to budgeting and performance evaluation, and accounting for entities such as hospitals, universities, and welfare agencies. — S. (S.) (change in existing course—eff. spring 15)

284. Applied Linear Models for Management (3)
Lecture—3 hours. Covers regression, analysis of variance, and multivariate analysis. Topics will focus on applications to management and policy problems. — W. (W.) (change in existing course—eff. spring 15)

285. Time Series Analysis and Forecasting (3)
Lecture—3 hours. Prerequisite: course 203B. Consider application of time series methods to evaluation and forecasting problems. Covers univariate and multivariate ARIMA models and transfer function models. Applications will be in such areas as economics, finance, budgeting, program evaluation, and industrial process control. — S. (S.) Tsai (change in existing course—eff. spring 16)

286. Telecommunications and Computer Networks (3)
Lecture—3 hours. Prerequisite: course 280. Communication system components, common carrier services; design and implementation of computer networks, network management and distributed environments; local area networks; data security in computer networks. — S. (S.) (change in existing course—eff. spring 15)

287. Database Systems (3)
Lecture—3 hours. Prerequisite: course 280. Hierarchical, network, and relational models for database systems. Design and implementation of models. Performance evaluation and benchmarking. Query structure and languages. Data security and integrity. Application to managerial decision making and decision support systems. — W. (W.) Yang (change in existing course—eff. spring 15)

288. Special Topics in Management of Information Systems (3)
Lecture—3 hours. Managerial aspects of information systems. Topics sheltering applications in organizations, planning and implementation of computer information systems, decision support systems, management of computer-based information systems, office automation. — Topkis (change in existing course—eff. spring 15)

290. Topics in General Management (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Advanced topics in general management. Topics will cover more extensively issues discussed in courses 201A and 201B; current business interest topics in fields of business, corporate communications, development, or workplace processes. May be repeated for credit. — F. (F.) (change in existing course—eff. spring 15)

291. Topics in Organizational Behavior (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Topics will cover more extensively issues discussed in courses 201A and 201B; current business interest topics in fields of business, corporate communications, development, or workplace processes. May be repeated for credit. — W. (W.) O'Mahony (change in existing course—eff. spring 15)

292. Topics in Finance (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Advanced topics in social psychology and sociology of organizations. Topics will cover more extensively issues discussed in courses 201A and 201B; current business interest topics in fields of business, corporate communications, development, or workplace processes. May be repeated for credit. — W. (W.) Chen (change in existing course—eff. spring 15)

293. Topics in Marketing (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Advanced topics in marketing, which may include marketing research, new product development, brand management, pricing, distribution management, service marketing, hitech marketing, advertising, sales promotions, marketing through the Web. May be repeated for credit. — F. (F.) (change in existing course—eff. spring 15)

294. Topics in Accounting (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Contemporary and emerging issues in financial management accounting. Application of modern techniques of evaluation and analysis of financial information. Use of appropriate electronic database and research techniques. May be repeated for credit. — F. (F.) (change in existing course—eff. spring 15)

295. Topics in Information Technology (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Application of information technology to management and management of information technology. Adaptation to the dynamic nature of the field. May be repeated for credit. — F. (F.) (change in existing course—eff. spring 15)

296. Topics in Technology Management (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Introduction to budgeting and performance evaluation, and accounting for entities such as hospitals, universities, and welfare agencies. — S. (S.) (change in existing course—eff. spring 15)

297. Topics in International Management (3)
Seminar—3 hours. Prerequisite: completion of all first-year graduate courses at the Graduate School of Management or the equivalent. Broader environment in which U.S. firms and their foreign competitors operate. Integration of material from other topics courses (marketing, strategy, finance, accounting, information technology, technology management) into the international setting. May be repeated for credit. — S. (S.) Bhargava (change in existing course—eff. spring 15)

298. Directed Group Study (1-5)
Seminar—1-5 hours. Prerequisite: consent of instructor. (S/U grading only.) — F. W. S. (F. W. S.) (change in existing course—eff. spring 15)

299. Individual Study (1-12)
Prerequisite: consent of instructor. (S/U grading only.) — W. F. W. S. (W. F. W. S.) (change in existing course—eff. spring 15)

Professional

401. Crisis Management (1)
Laboratory/discussion—1 hour. Establishes and explores the defining characteristics of crises. Will learn to anchor crisis management firmly within overall strategic management and also acquire a set of useful tools and techniques for planning for and handling actual crises. (S/U grading only.) — F. F. Friedman (change in existing course—eff. spring 15)

402. Crisis Communications and Reputation Management (1)
Laboratory/discussion—1 hour. Intended to provide you with an understanding of the framework and tools necessary to successfully address communications and reputation management issues in a variety of crisis situations. (S/U grading only.) — F. (F.) Biggs (change in existing course—eff. spring 15)

403. Business Statistics Practicum (1)
Project—1 hour. Prerequisite: MGT, MGP, or MGB 203A, MGT, MGP, or MGB 203B concurrently or completed. Restricted to students in the MBA program. Applies techniques and concepts in business statistics to real case studies. — F. (F.) Tsai (change in existing course—eff. spring 15)
404. Organizational Change Management (1)
Laboratory/discussion—1 hour. Challenges in getting significant changes made in organizations. Learn Organization Change Management (OCM) techniques and discuss case situations where OCM techniques play a role. (S/U grading only).—W. (W.) Nathur (change in existing course—eff. spring 15)

405. Business Literature (1)
Laboratory/discussion—1 hour. Will examine Business history—historical trends that might influence contemporary business. Some argue that the recent collapse of the credit system might have been averted if business leaders had a better sense of history. (S/U grading only).—W. (W.) (change in existing course—eff. spring 15)

406. Ethical Issues in Management (1)
Lecture/discussion—1 hour. Provides a working knowledge of the risks and opportunities arising from climate change and climate policy for businesses. (S/U grading only).—W. (W.) Rubel (change in existing course—eff. spring 15)

407. Storytelling for Leadership (1)
Lecture/discussion—1 hour. Internalize the fundamental principles behind the stories that educate, influence, motivate, inspire, persuade and connect. (S/U grading only).—S. (S.) (change in existing course—eff. spring 15)

408. The Business of the Media (1)
Lecture/discussion—1 hour. Focuses on the media industries and how emerging digital technologies are disrupting the way media consumption, distribution and business models work. Will highlight the economics of several media, both news and entertainment. (S/U grading only).—S. Su. (S. Su.) (change in existing course—eff. spring 15)

409. Managing Multi-Asset Class Investment Portfolios (1)
Lecture—3 hours. Restricted to students enrolled in the MBA program. Focuses on the finance principles related to the risk and return of the private equity (PE) industry, valuation of PE target companies, the structuring of leveraged buyouts (LBOs), and the management of portfolio companies. (S/U grading only).—W. (W.) Yasuda (change in existing course—eff. spring 15)

410. Corporate Governance (1)
Lecture/discussion—1 hour. Covers recent and not-so-recent business and accounting scandals, discuss how corporations can better operate in the interests of shareholders and the public, and learn from people who rely on corporate governance in making investment decisions. (S/U grading only).—W. Su. F. (W., W. Su.) Maher (change in existing course—eff. spring 15)

411. Turnaround Management (1)
Lecture/discussion—1 hour. Evaluate the financial performance of a company, identify opportunities for improvement, propose real solutions to enhance performance, and most important inspire action in staff. (S/U grading only).—F., W. Su. F. (W., W. Su.) (change in existing course—eff. spring 15)

412. International Marketing (1)
Lecture/discussion—1 hour. Understanding basic concepts of international marketing. Understanding and managing heterogeneous, dynamic, and interdependent environments across countries. How to develop and implement an international marketing strategy: where and how to compete, how to adapt your marketing mix. (S/U grading only).—W. (W.) Peters (change in existing course—eff. spring 15)

413. Sustainable Business Ventures: Business and Energy (1)
Lecture/discussion—1 hour. Introduction to sustainability goals, indicators, values, measurement techniques, and practice how it applies to large and small enterprise. (S/U grading only).—W. (W.) Jaffet (change in existing course—eff. spring 15)

414. Multi-Channel Marketing (1)
Lecture/discussion—1 hour. Multi-channel marketing strategies empower managers to create value for different customer segments. Covers the necessary concepts to evaluate and select go-to market strategies in order to capitalize on the ubiquity of modern customers. (S/U grading only).—W. (W.) Rubel (change in existing course—eff. spring 15)

415. Climate Risks and Opportunities (1)
Lecture/discussion—1 hour. Provide a working knowledge of the risks and opportunities arising from climate change and climate policy for businesses. (S/U grading only).—S. Su. Mazzucatori (change in existing course—eff. spring 15)

416. Topics in Private Equity (1)
Lecture—1 hour. Prerequisite: course 205. Restricted to students enrolled in the MBA program. Focuses on the finance principles related to the risk and return of the private equity (PE) industry, valuation of PE target companies, the structuring of leveraged buyouts (LBOs), and the management of portfolio companies. (S/U grading only).—W. (W.) Yasuda (change in existing course—eff. spring 15)

417. Incentives and Controls (1)
Lecture/discussion—1 hour. Understand how organizations use financial and non-financial performance management and incentive systems to motivate people and manage resources. (S/U grading only).—W., W. Su. F. (W., W. Su.) Maher (change in existing course—eff. spring 15)

418. Scientific Discovery and Business Innovation at Scale in the Food and Agriculture Sector (1)
Lecture—3 hours. Restricted to students in the MBA program. Scientific innovation within the food and agriculture sector profoundly influences the sustainability of society and enterprise competitiveness. Students will learn how business innovation can exist antagonistically or synergistically with scientific discovery and its influence on enterprise competitiveness. (S/U grading only).—W., W. Su. F. (W., W. Su.) Schmitz (change in existing course—eff. spring 15)

419. Business Strategy Consulting Skills (1)
Lecture—5 hours. Restricted to students enrolled in the MBA program. Students will learn practical business consulting skills which will help apply strategy theories and insights, and work product. (Deferred grading only, pending completion of sequence).—F. (F.) (change in existing course—eff. spring 15)

420. Advanced Optimization in a Python-based Modeling Language (1)
Virtual lecture—1 hour. Prerequisite: course 252 or MGT 252 or MGT 252, and course 206 or MGT 206 or ECO 206. Restricted to students enrolled in the MBA program. Covers advanced optimization modeling techniques and practical application of modern, scalable modeling language. Techniques will be developed using examples from production planning in a supply chain, but students may explore other areas of application of optimization for their final project. (S/U grading only).—W. (W.) Woodruff (new course—eff. winter 16)

422. Behavioral Finance and Valuation (1)
Lecture—1 hour. Prerequisite: MGT 260 or MGP 260 or course 260, and MGT 261 or MGP 261 or MGP 261 or course 261. Restricted to students enrolled in the MBA program. Investigates the market anomaly and market anomalies can cause asset prices to deviate from fundamental values, creating profit opportunities for sophisticated investors. The course will cover techniques of financial analysis with the goal of learning how to value stocks and identify mispricing. (S/U grading only).—S. (S.) Scherbina (new course—eff. spring 16)

424. Practicum for Managing People in Modern Organizations (1)
Project—1 hour. Prerequisite: course 224. Restricted to students in the MBA program. Provides solid grounding in the management of work and the employment relationship. Examines firms’ interrelated policies and practices for managing people. —W. (W.) Hsu (change in existing course—eff. spring 15)

434. Practicum for Pricing (1)
Project—1 hour. Prerequisite: course 234. Restricted to students in the MBA program. Provides an overview of the principles and concepts learned in Pricing by (1) teaching the necessary statistical and mathematical skills, and (2) requiring a report for a real Pricing case. —W. (W.) Jiang (change in existing course—eff. spring 15)

440. Integrated Management Project (3)
Project—3 hours. Prerequisite: first-year core courses of MBA program. Applies classroom learning to solve complex business challenges for real world clients. Students learn practical consulting skills while their clients benefit from the student’s experience, insights, and work product. (Deferred grading only, pending completion of sequence).—F. (F.) (change in existing course—eff. spring 15)

440A. Integrated Management Project (3)
Project—3 hours. Prerequisite: first-year core courses of MBA program. Restricted to full-time MBA students. Applies classroom learning to solve complex business challenges for real world clients. Students learn practical consulting skills while their clients benefit from the student’s experience, insights, and work product. (Deferred grading only, pending completion of sequence).—F. (F.) (change in existing course—eff. spring 15)

442. Practicum for Marketing Communication (1)
Project—1 hour. Prerequisite: course 242. Restricted to students in the MBA program. Provides experience applying concepts learned in Marketing Communications to a realistic advertising or communication problem faced by firms. —S. (S.) Yoganarasimhan (change in existing course—eff. spring 15)

443. Practicum for Customer Relationship Management (1)
Project—1 hour. Prerequisite: course 243. Practicum for students in the MBA program. Hands-on training in applying Customer Relationship Management concepts and metrics to secondary data. Enhances
ability to interpret results and decide the right type of marketing actions by requiring an executive report at the end of the quarter. —F. (F) Anvidakshan
(change in existing course—eff. spring 15)

448. Practicum for Marketing Strategies (1) Project—1 hour. Prerequisite: course 248. Restricted to students in the MBA program. Provides opportunities to apply the concepts covered in the Marketing Strategies class through a group project involving the analysis of a strategic marketing decision based on business-related issues, simulation and modeling. —F. (F) Rubel
(change in existing course—eff. spring 15)

449. Marketing Research Practicum (1) Project—1 hour. Prerequisite: course 249. Restricted to students in the MBA program, or in some cases with permission of instructor. Provides opportunities to apply the concepts and methods covered in the Marketing Research class. Hands-on and project-based, work could be either individual or in groups depending on enrollments and/or interests of students. —S. (S) Bunch
(change in existing course—eff. spring 15)

450. Practicum for Technology Strategy and Competition (1) Project—1 hour. Prerequisite: course 250. Restricted to students in the MBA program. In-depth practicum project experience. Applies concepts, models, and models learned in course 250 to a real-world business problem, through data collection, data analysis, simulation, modeling and post-model interpretation. —W. (W) Bhargava
(change in existing course—eff. spring 15)

460. Practicum for Corporate Finance and Real Estate (1) Project—1 hour. Prerequisite: course 260. Restricted to students in the MBA program. Work in groups to select and value a financial entity. It could be a firm, a sports player, a building, a project, or a patent. Grade based on an in-class presentation and a write-up. —S. (S) Scherbina
(change in existing course—eff. spring 15)

461. Practicum for Investment Analysis (1) Project—1 hour. Prerequisite: course 261. Restricted to students in the MBA program. Provides practical experience applying concepts learned in Investment Analysis to a realistic portfolio management setting via a hypothetical exercise. Produce a realistic executive summary and presentation of an investment proposal for a hypothetical client. —F. (F) Chen
(change in existing course—eff. spring 15)

464. Practicum for Taxes and Business Strategy (1) Project—1 hour. Prerequisite: course 264. Restricted to students in the MBA program. Practical application project drawing from the tax planning theory contained in course 264. Project consists of a business formation and operation, change in organization (incorporation), and movement into multi-national and multi-jurisdictional tax. —F. (F) Y延an
(change in existing course—eff. spring 15)

465. Practicum for Venture Capital (1) Project—1 hour. Prerequisite: course 265. Restricted to students in the MBA program. Provides an opportunity to apply concepts learned in Venture Capital in a realistic setting. Complete project analyzing a potential investment in a hypothetical venture and prepare an ideal term sheet/investment agreement. —S. (S) Yasuda
(change in existing course—eff. spring 15)

467. Practicum for Teams and Technology (1) Project—1 hour. Prerequisite: course 267. Restricted to students in the MBA program. Groups investigate the performance, creativity, conflict, information sharing, and leadership behaviors of a real-world team. Provide consulting advice to the team, which not only gives analytic skills, but also builds presentation skills. —S. (S) Jay
(change in existing course—eff. spring 15)

469. Practicum for Business Intelligence Technologies (1) Project—1 hour. Prerequisite: course 269. Restricted to students in the MBA program. Projects applying concepts learned in Business Intelligence Technologies to real business problems. —W. (W) Yang
(change in existing course—eff. spring 15)

482. Practicum for Supply Chain Management Project (1) Project—1 hour. Prerequisite: MGT, MGP, or MGB 282 is a prerequisite or co-requisite. Restricted to students in the MBA program. Provides experience analyzing concepts learned in Supply Chain Management to a realistic management setting via a project. —S. (S) Chen
(change in existing course—eff. spring 15)

490. Directed Group Study Management Practicum (3) Lecture/discussion—3 hours. Prerequisite: consent of instructor; sponsorship of a GSM Academic Senate faculty member; approval of graduate advisor. Provides opportunity for students to gain experience in applying business methodologies previously acquired in other GSM classes. May be repeated for credit. Offered irregularly—Su. (Su.)
(change in existing course—eff. spring 15)

498. Directed Group Study Management Practicum (1-12) Project. Prerequisite: consent of instructor; sponsorship of a GSM Academic Senate faculty member, and approval of Graduate Advisor. Provides the opportunity for students to gain experience in applying business methodologies previously acquired in other GSM classes. May be repeated up to 6 units for credit. (S/U grading only.)—F, W, S. (F, W, S)
(change in existing course—eff. spring 15)

499. Directed Individual Study Management Practicum (1-12) Project. Prerequisite: consent of instructor; sponsorship of a Graduate School of Management Academic Senate faculty member, and approval of Graduate Advisor. Provides the opportunity for students to gain experience in applying business methodologies previously acquired in other Graduate School of Management courses. (S/U grading only.)—F, W, S. (F, W, S)
(change in existing course—eff. spring 15)

102

Mathematical and Physical Sciences

New and changed courses in Mathematical and Physical Sciences (MPS)

Lower Division

1. General Science: Science in the News (4) Lecture—3 hours; laboratory/discussion—1 hour. Prerequisite: lower division standing. Basic principles in science including numeracy, scale, energy, and time, the scientific method, good and bad science. Emphasis on science topics recently in the news. Offered irregularly. GE credit: ScEng. —F, W, S. (F, W, S)
(change in existing course—eff. spring 15)

71A. Explorations in Elementary Mathematics (3) Lecture—2 hours; laboratory—3 hours. Prerequisite: two years of high school mathematics. Weekly explorations of mathematical ideas related to the elementary school curriculum will be carried out by cooperative learning groups. Lectures will provide background and synthesize the results of group exploration. (Deferred grading only, pending completion of sequence.) Offered irregularly.
(change in existing course—eff. summer 15)

Mathematics

New and changed courses in Mathematics (MAT)

B. Elementary Algebra (no credit) Lecture—3 hours. Not open to Concurrent student enrollment. Basic concepts of algebra, including polynomials, factoring, equations, graphs, and inequalities. Offered only if sufficient number of students enroll. (P/NP grading only.)—F. (F)
(change in existing course—eff. winter 15)

C. Trigonometry (no credit) Lecture—2 hours. Not open to Concurrent student enrollment. Basic concepts of trigonometry, including trigonometric functions, identities, inverse functions, and inequalities. Offered only if sufficient number of students enroll. (P/NP grading only.)—F. (F)
(change in existing course—eff. winter 15)

D. Intermediate Algebra (no credit) Lecture—3 hours. Not open to Concurrent student enrollment. Basic concepts of algebra, prepares student for college work in mathematics, such as course 16A or 21A. Functions, equations, graphs, logarithms, and systems of equations. Offered only if sufficient number of students enroll. (P/NP grading only.)—F. (F)
(change in existing course—eff. winter 15)

Lower Division

17A. Calculus for Biology and Medicine (4) Lecture—3 hours; discussion—1 hour. Prerequisite: two years of high school algebra, plane geometry, plane trigonometry, and analytical geometry, and satisfying the Mathematics Placement Requirement. Introduction to differential calculus via applications in biology and medicine. Limits, derivatives of polynomials, trigonometric, and exponential functions, graphing, applications of the derivative to biology and medicine. Not open for credit to students who have completed course 16B, 16C, 21A, 21B, or 21C; only 2 units of credit to students who have completed course 16A. GE credit: ScEng | QL, SE, SL—F, W, S. (F, W, S)
(change in existing course—eff. fall 15)

11A. Mathematical and Physical Sciences Seminar (2) Lecture—2 hours. Prerequisite: mentorship for undergraduate research participants in the physical and mathematical sciences. Research and writing in the physical and mathematical sciences. Presentations by various science faculty members. Offered irregularly.—F, W. S. (F, W, S)
(change in existing course—eff. spring 15)

11B. Mathematical and Physical Sciences Seminar (2) Lecture—2 hours. Prerequisite: mentorship for undergraduate research participants in the physical and mathematical sciences. Research and writing in the physical and mathematical sciences. Presentations by various science faculty members. Offered irregularly.—F, W. S. (F, W, S)
(change in existing course—eff. spring 15)
718B. Explorations in Elementary Mathematics (3)
Lecture—2 hours; laboratory—3 hours. Prerequisite: two years of high school mathematics. Weekly explorations of mathematical ideas related to the elementary school curriculum will be carried out by cooperative learning groups. Lectures will provide background and synthesize the results of group exploration. (Deferred grading only, pending completion of sequence.) Offered irregularly.

[change in existing course—eff. fall 06]

Upper Division

115A. Number Theory (4)
Lecture/discussion—4 hours. Prerequisite: course 21B. Divisibility and related topics, diophantine equations, selected topics from the theory of prime numbers. Designed to serve as preparation for the more rigorous upper division courses. GE credit: QB, SE—F (F)

[change in existing course—eff. summer 15]

125B. Real Analysis (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 21A and 32A. Theory of the derivative, Taylor series, integration, partial derivatives, Implicit Function Theorem. Not open for credit to students who have completed former course 127C. GE credit: SciEng: SE—W, S, W, S (W, S)

[change in existing course—eff. fall 14]

Graduate

200A. Problem-Solving in Analysis (1)
Lecture—1 hour; extensive problem solving. Prerequisite: courses 21ABC. Problem-solving in graduate analysis: continuous functions, metric spaces, Banach and Hilbert spaces, bounded linear operators, the spectral theorem, distributions, Fourier series and transforms, Lp spaces, Sobolev spaces. May be repeated twice for credit. (Deferred grading only, pending completion of sequence.)—S (S)

[change in existing course—eff. summer 15]

200B. Problem-Solving in Analysis (1)
Lecture—1 hour; extensive problem solving. Prerequisite: courses 21ABC. Problem-solving in graduate analysis: continuous functions, metric spaces, Banach and Hilbert spaces, bounded linear operators, the spectral theorem, distributions, Fourier series and transforms, Lp spaces, Sobolev spaces. May be repeated twice for credit. (Deferred grading only, pending completion of sequence.)—F (F)

[change in existing course—eff. summer 15]

201A. Analysis (4)

[change in existing course—eff. summer 15]

201C. Analysis (4)

[change in existing course—eff. summer 15]

207A. Methods of Applied Mathematics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Ordinary differential equations and dynamical systems. Variational principles. Eigenfunctions, integral equations and Green’s functions. Complex analysis and contour integration. Laplace’s equation. Diffusion equations. Wave phenomena. Dimensional analysis and scaling. Asymptotic expansions and perturbation theory. Stochastic processes and Brownian motion.—F (F)

[change in existing course—eff. summer 15]

207B. Methods of Applied Mathematics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Ordinary differential equations and dynamical systems. Variational principles. Eigenfunctions, integral equations and Green’s functions. Complex analysis and contour integration. Laplace’s equation. Diffusion equations. Wave phenomena. Dimensional analysis and scaling. Asymptotic expansions and perturbation theory. Stochastic processes and Brownian motion.—W. (W)

[change in existing course—eff. summer 15]

207C. Methods of Applied Mathematics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Ordinary differential equations and dynamical systems. Variational principles. Eigenfunctions, integral equations and Green’s functions. Complex analysis and contour integration. Laplace’s equation. Diffusion equations. Wave phenomena. Dimensional analysis and scaling. Asymptotic expansions and perturbation theory. Stochastic processes and Brownian motion.—S (S)

[change in existing course—eff. summer 15]

215A. Topology (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Fundamental group and covering space theory. Homology and cohomology. Manifolds and duality. CW complexes. Fixed point theorems. Offered in alternate years.—F

[change in existing course—eff. summer 15]

215B. Topology (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Fundamental group and covering space theory. Homology and cohomology. Manifolds and duality. CW complexes. Fixed point theorems. Offered in alternate years.—W

[change in existing course—eff. summer 15]

215C. Topology (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Fundamental group and covering space theory. Homology and cohomology. Manifolds and duality. CW complexes. Fixed point theorems. Offered in alternate years.—S

[change in existing course—eff. summer 15]

218A. Partial Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 210ABC or consent of instructor. A year-long sequence on PDEs which covers linear transport, Laplace, heat, and wave equations, maximum principles, method of characteristics, Sobolev and Hölder space theory, weak derivatives, semilinear, quasilinear, and fully nonlinear elliptic/parabolic equations, nonlinear hyperbolic equations, and compensated compactness. Offered in alternate years.—F

[change in existing course—eff. summer 15]

218B. Partial Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 218A or consent of instructor. A year-long sequence on PDEs which covers linear transport, Laplace, heat, and wave equations, maximum principles, method of characteristics, Sobolev and Hölder space theory, weak derivatives, semilinear, quasilinear, and fully nonlinear elliptic/parabolic equations, nonlinear hyperbolic equations, and compensated compactness. Offered in alternate years.—W

[change in existing course—eff. summer 15]

218C. Partial Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 218B or consent of instructor. A year-long sequence on PDEs which covers linear transport, Laplace, heat, and wave equations, maximum principles, method of characteristics, Sobolev and Hölder space theory, weak derivatives, semilinear, quasilinear, and fully nonlinear elliptic/parabolic equations, nonlinear hyperbolic equations, and compensated compactness. Offered in alternate years.—S

[change in existing course—eff. summer 15]

228A. Numerical Solution of Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 128C. Numerical solutions of initial-value, eigenvalue and boundary-value problems for ordinary differential equations. Numerical solution of parabolic and hyperbolic partial differential equations. Offered in alternate years.—F

[change in existing course—eff. summer 15]

228B. Numerical Solution of Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 128C. Numerical solutions of initial-value, eigenvalue and boundary-value problems for ordinary differential equations. Numerical solution of parabolic and hyperbolic partial differential equations. Offered in alternate years.—W

[change in existing course—eff. summer 15]

228C. Numerical Solution of Differential Equations (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 128C. Numerical solutions of initial-value, eigenvalue and boundary-value problems for ordinary differential equations. Numerical solution of parabolic and hyperbolic partial differential equations. Offered in alternate years.—S

[change in existing course—eff. summer 15]

235A. Probability Theory (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: courses 125B and 135A or Statistics 131A or consent of instructor. Measure-theoretic foundations, abstract integration, independence, laws of large numbers, characteristic functions, central limit theorems. Weak convergence in metric spaces, Brownian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. [Same course as Statistics 235A.]—F (F)

[change in existing course—eff. summer 15]
ian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. (Same course as Statistics 235B.)—W. (W.)

235C. Probability Theory (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 235B/Statistics 235B or consent of instructor. Measure-theoretic foundations, abstract integration, independence, laws of large numbers, characteristic functions, central limit theorems. Weak convergence in metric spaces, Brownian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. (Same course as Statistics 235C.)—S. (S.)

250A. Algebra (4)

250B. Algebra (4)

250C. Algebra (4)

258B. Discrete and Mixed-Integer Optimization (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 25 and 167, or consent of instructor. Combinatorial optimization and mixed-integer linear optimization problems. Ideal and strong formulations, cutting planes, branch and cut, decomposition methods. Offered in alternate years. W. (W.)

Professional

301A. Mathematics Teaching Practicum (3)
Fieldwork—5 hours; discussion—1 hour. Prerequisite: course 302A and 303A required concurrently or consent of instructor. Specialist training in mathematics teaching. Teaching, training, and cross observing classes taught using large group Socratic techniques, small group guided inquiry experiences, and/or other approaches to teaching at various grade levels. Required for advanced degrees in mathematics education. May be repeated one time for credit. Offered irregularly.

301C. Mathematics Teaching Practicum (3)
Fieldwork—5 hours; discussion—1 hour. Prerequisite: course 302C and 303C required concurrently or consent of instructor. Specialist training in mathematics teaching. Teaching, training, and cross observing classes taught using large group Socratic techniques, small group guided inquiry experiences, and/or other approaches to teaching at various grade levels. Required for advanced degrees in mathematics education. May be repeated one time for credit. Offered irregularly.

302A. Curriculum Development in Mathematics (1)
Lecture/discussion—1 hour. Prerequisite: course 303A required concurrently or consent of instructor. Mathematics curriculum development for all grade levels. Required for advanced degrees in mathematics education. May be repeated one time for credit. Offered irregularly.

302B. Curriculum Development in Mathematics (1)
Lecture/discussion—1 hour. Prerequisite: course 303B required concurrently or consent of instructor. Mathematics curriculum development for all grade levels. Required for advanced degrees in mathematics education. May be repeated one time for credit. Offered irregularly.

302C. Curriculum Development in Mathematics (1)
Lecture/discussion—1 hour. Prerequisite: course 303C required concurrently or consent of instructor. Mathematics curriculum development for all grade levels. Required for advanced degrees in mathematics education. May be repeated one time for credit. Offered irregularly.

303A. Mathematics Pedagogy (1)
Lecture/discussion—1 hour. Prerequisite: course 302A or 210AL required concurrently or consent of instructor. An introduction to the development and implementation of mathematical pedagogy and mathematical content, including a historical survey of past and present methods in view of some of the influences that shaped their development. May be repeated one time for credit. Offered irregularly.

303B. Mathematics Pedagogy (1)
Lecture/discussion—1 hour. Prerequisite: course 302B or 210BL required concurrently or consent of instructor. An introduction to the development and implementation of mathematical pedagogy and mathematical content, including a historical survey of past and present methods in view of some of the influences that shaped their development. May be repeated one time for credit. Offered irregularly.

303C. Mathematics Pedagogy (1)
Lecture/discussion—1 hour. Prerequisite: course 302C or 210CL required concurrently or consent of instructor. An introduction to the development and implementation of mathematical pedagogy and mathematical content, including a historical survey of past and present methods in view of some of the influences that shaped their development. May be repeated one time for credit. Offered irregularly.

304. Science & Practice of Mindfulness and Compassion (1)
Lecture/discussion—10 hours; independent study—20 hours. Prerequisite: consent of instructor. Restricted to Medical school students. Course will examine current scientific evidence for the effects of different mindfulness and compassion meditation practices in both healthy and clinical samples. (P/F grading only)—F, W, S, Su. (F, W, S, Su.) Odor

405. Metabolism, Endocrinology, Reproduction and Nutrition (9.5)
Lecture—3.8 hours; discussion/laboratory—2.8 hours. Prerequisite: Biological Chemistry 410A; Human Physiology 400. Restricted to Medical students only. Basic and pathophysiologic processes involved in human reproductive and endocrine control systems, nutritional regulation, and foundational genetics across the lifespan. Integrate information across these systems and use clinical reasoning process to identify and understand relevant perturbations and diseases. May be repeated three times for credit. (P/F grading only; deferred grading only, pending completion of sequence.)—W. (W.) Hagiwara, Hou, Prescott, Sheely

411KA. ACE-PC Program Doctoring 1 (8)
Clinical Activity—5 hours; lecture/discussion—6 hours. Prerequisite: consent of instructor. Small case-based learning groups with training in patient communication and interviewing techniques clinical identification and problem solving applications of social psychological cultural bioethical and foundational science concepts to patient case scenarios outpatient clinical experiences and didactic presentations. (P/F grading only; deferred grading only, pending completion of sequence.)—F, W, Su. (F, W, S, Su.) Eidson-Ton, Han, Hensley

411KB. ACE-PC Program Doctoring 1 (5)
Clinical Activity—4 hours; discussion—1 hour. Prerequisite: consent of instructor. Application of multidisciplinary basic, social and clinical science to clinical cases in small groups. History, physical examination with preceptors. Didactics in epidemiology, ethics, sexuality and clinical reasoning. Evaluation of professional competencies, attitudes and skills needed in the practice of medicine. (P/F grading only; deferred grading only, pending completion of sequence.)—W. (W.) S., W. (W. J.), Henderson, Lee, Siclotta

421KA. ACE-PC Program Doctoring 2 (6)
Discussion—1 hour; lecture/discussion—1 hour; internship—0.5 hours. Prerequisite: admission into ACE-PC and successful completion of MDS 411KA & MDS 411KB. MDS 421KA-C are a year-long series
of courses. Objectives and assessments have been accelerated to accommodate the students enrolled in the ACE-PC Program. Students will participate in all aspects of Doctoring 2, other than what was done in 411KA/KB. (P/F grading only; deferred grading only; pending completion of sequence.)—Su. (Su.) Henderson, Sciolla, Williams

(new course—eff. summer 14)

421KA. ACE-PC Program Doctoring 2 (6) Discussion—1 hour; lecture/discussion—1 hour; internship—0.5 hours. Prerequisite: approval by the School of Medicine on Student Progress; medical student only. MDS 421KA-C are a year-long series of courses. Objectives and assessments have been accelerated to accommodate the students enrolled in the ACE-PC Program. Students will participate in all aspects of Doctoring 2, other than what was done in 411KA/KB. (P/F grading only; deferred grading only; pending completion of sequence.)—F (F.) Henderson, Sciolla, Williams

(new course—eff. summer 15)

421KC. ACE-PC Program Doctoring 2 (6) Discussion—1 hour; lecture/discussion—1 hour; internship—0.5 hours. Prerequisite: approval by the School of Medicine on Student Progress; medical student only. MDS 421KA-C are a year-long series of courses. Objectives and assessments have been accelerated to accommodate the students enrolled in the ACE-PC Program. Students will participate in all aspects of Doctoring 2, other than what was done in 411KA/KB. (P/F grading only; deferred grading only; pending completion of sequence.)—W (W.) Henderson, Sciolla, Williams

(new course—eff. summer 15)

428. Foundations of Bioethics (1) Discussion—3 sessions; lecture/discussion—3 sessions; independent study—16.5 sessions; web virtual lecture—1 session. Prerequisite: consent of instructor. Course will expose students to core content in bioethics and law and introduce a framework for ethical decision-making, while emphasizing relationships between bioethics and clinical care. (P/F grading only)—Su. (S.) Fairman, Rich

(new course—eff. summer 14)

429. Transition to Clerkships (1) Laboratory/discussion—12 hours; workshop—13 hours; discussion—7 hours; independent study—2 hours. Incoming third year and medical students will participate in a variety of educational experiences designed to prepare them to begin their clerkship curriculum. Course content will be disseminated in large and small group settings. (P/F grading only)—S. (S.) B irrigopal

(new course—eff. spring 15)

430A. Doctoring 3 (1) Discussion—3 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Restricted to Medical students only. Application of multidisciplinary basic, social & clinical science concepts to clinical cases in small group discussions facilitated by medical school faculty. Evaluation of professional competencies, attitudes and skills needed in the practice of clinical medicine. (H/P/F grading only; deferred grading only; pending completion of sequence.)—Su. (Su.) Wilkes

(change in existing course—eff. spring 15)

430B. Doctoring 3 (1) Discussion—2 hours. Prerequisite: approval by SOM Committee on Student Progress. Restricted to Medical students only. Application of multidisciplinary basic, social & clinical science concepts to clinical cases in small group discussions facilitated by medical school faculty. Evaluation of professional competencies, attitudes and skills needed in the practice of clinical medicine. (H/P/F grading only; deferred grading only; pending completion of sequence.)—F (F.) Wilkes

(change in existing course—eff. spring 15)

430C. Doctoring 3 (1) Discussion—2 hours. Prerequisite: approval by SOM Committee on Student Progress. Restricted to Medical students only. Application of multidisciplinary basic, social & clinical science concepts to clinical cases in small group discussions facilitated by medical school faculty. Evaluation of professional competencies, attitudes and skills needed in the practice of clinical medicine. (H/P/F grading only; deferred grading only; pending completion of sequence.)—W (W.) Wilkes

(change in existing course—eff. spring 15)

430D. Doctoring 3 (1) Discussion—2 hours. Prerequisite: approval by SOM Committee on Student Progress. Restricted to Medical students only. Application of multidisciplinary basic, social & clinical science concepts to clinical cases in small group discussions facilitated by medical school faculty. Evaluation of professional competencies, attitudes and skills needed in the practice of clinical medicine. (H/P/F grading only; deferred grading only; pending completion of sequence.)—W (W.) Wilkes

(change in existing course—eff. spring 15)

440. Doctoring 4 Teaching Fellowship (3) Discussion—5 hours; seminar—0.25 hours. Prerequisite: course 430A, 430B, 430C, 430D; consent of instructor. Restricted to Medical student only. Instruc tion on teaching methodology and pedagogy. Mentored teaching of junior medical students in seminar, lecture, and bedside. (H/P/F grading only)—F, W, Su. (F, W, Su.) Wilkes

(change in existing course—eff. spring 15)

440A. Doctoring 4 Teaching Fellowship (1) (cancelled course—eff. fall 15)

440B. Doctoring 4 Teaching Fellowship (1) (cancelled course—eff. winter 16)

440C. Doctoring 4 Teaching Fellowship (1) (cancelled course—eff. spring 15)

460CR. Introduction to Clinical Research (2) Lecture—2 hours; independent study—3 hours. Restricted to completion of M.D., D.D.S., D.M.D., O.D., N.D., Pharm.D., D.V.M., Ph.D., or D.N.S. in nursing; application and acceptance into the Clinical Research Graduate Group, K30 program. Basic and advanced statistical methods for designing research projects, Research with Animals, Conflict of Interest, Research Misconduct, and Entrepreneurship/Industry Collaborations/Intellectual Property/Technology Transfer. (S/U grading only)—Su. (S.) Wun

(change in existing course—eff. winter 15)


(change in existing course—eff. winter 15)

468. Multidisciplinary International Preceptorship (1-12) (cancelled course—eff. summer 16)

482. Lecture Series in Reproductive Health (1) Lecture—1 hour. Prerequisite: Medical student in good standing. Restricted to Medical student only. The practical aspects of providing quality reproductive health care and application in student-run free clinics and 3rd year clerkships. Only medical students may enroll for credit; undergraduates may audit the course. May be repeated twice for credit. (P/F grading only)—W (W.) Paik

(change in existing course—eff. winter 15)

483. Insights in Political, Legal and Business Aspects of Medicine (1) Lecture—1 hour. Prerequisite: Medical student in good standing. Restricted to Medical student only. The practical aspects of the physician’s role in business. May be repeated twice for credit. (P/F grading only)—S. (S.)
486. Topics in Health Care Improvement (0.5)
Lecture/discussion—15 sessions. Lecture series will cover major topics in health care improvement, presented by guest speakers who are leaders in the field. May be repeated for credit. (P/F grading only)—S. (S.) Shaikh
(new course—eff. spring 15)

486C. International Clinical Preceptorship (1-12)
Clinical activity—30 hours. Prerequisite: medical students with consent of instructor. Multidisciplinary preceptorship in a foreign country. Clinical credit will be awarded upon completing this course, once approval has been received from the appropriate governing committee. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(new course—eff. spring 15)

487D. International Elective (1-12)
Independent study—20 hours, clinical activity—10 hours. Prerequisite: medical students with consent of instructor. Multidisciplinary preceptorship in a foreign country. Course used to award non-clinical credit for international experiences which have been approved by the appropriate governing committee. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(new course—eff. fall 15)

493. Independent Special Study Module (3-12)
Prerequisite: consent of instructor. FYOC approval required. Student developed alternative to the SSM/SPO Requirement. Approval by FYOC is required. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 15)

493D. Teaching the Basic Sciences SEM (6)
Lecture—4 hours; laboratory—10 hours; tutorial—10 hours. Prerequisite: course 440 concurrently; consent of instructor. Restricted to UC Davis School of Medicine students only. Special Studies Module, a yearlong in progress court to teach and discussion education technique and theory. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(new course—eff. spring 15)

493Q. Improving Quality in Health Care (6)
Lecture—6 hours; discussion/laboratory—8 hours; laboratory—30 hours; tutorial—10 hours. Prerequisite: course 440 concurrently; consent of instructor. Working in interdisciplinary teams, will explore the theory and practical methods being employed to make improvement in health care systems while providing opportunities for interprofessional educational experience. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(new course—eff. fall 15)

494. Non-Clinical Medical Student Externship (3-9)
Independent study—20 hours; clinical activity—10 hours. Prerequisite: consent of instructor. Restricted to students with approval of credit by the Fourth Year Oversight Committee. Generic course for awarding externship credit for medical student rotations that are not primarily focused on patient care. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Wallach
(new course—eff. fall 14)

497. Scholarly Project (6)
Seminar—0.25 hours; independent study—0.5 hours. Prerequisite: project proposal must be accepted by the Scholarly Project Executive Committee. (SPEC), consent of instructor. Restricted to 4th year medical students only. Develop a research project on a focused topic area, implements the research, writes a publishable paper, and presents an oral summary of the project. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F, W, S, Su. (F, W, S, Su.) Schaeter
(change in existing course—eff. spring 15)

497A. Scholarly Project (2)
(cancelled course—eff. fall 15)

497B. Scholarly Project (2)
(cancelled course—eff. winter 16)

497C. Scholarly Project (2)
(cancelled course—eff. spring 15)

Medicine: Anesthesiology and Pain Medicine

New and changed courses in Anesthesiology and Pain Medicine (ANE)

Upper Division

493A. Applied Physiology and Pharmacology (6)
Lecture—5 hours; lecture/laboratory—10 hours; laboratory—16 hours; clinical activity—4 hours. Prerequisite: consent of instructor. UC Davis School of Medicine students only. Review and demonstrate the application of basic physiology and pharmacology to patient care. There will be an in-depth analysis of the physiology and pharmacology of the cardiovascular, pulmonary, nervous, renal and endocrine systems. (H/P/F grading only)—W. (W.) Fleming
(change in existing course—eff. fall 14)

493B. Interdisciplinary Medicine in Pain Care (6)
Lecture—5 hours; lecture/laboratory—10 hours; laboratory—16 hours; clinical activity—4 hours. Prerequisite: consent of instructor. UC Davis School of Medicine students only. Integrate applied and practical neuroanatomy, physiology, pharmacology, psychology/psychiatry and social medicine in the care of patients who are receiving care for pain caused by acute or chronic medical disease or trauma. (H/P/F grading only)—S. (S.) Fishman
(change in existing course—eff. fall 14)

Medicine: Biological Chemistry

New and changed courses in Biological Chemistry (BCM)
Graduate

291. Seminar in Genetic Approaches to Pathogenesis of Human Disease (1)
Seminar—1 hour. Prerequisite: student in Genetics Graduate Group or consent of instructor. Current genetic approaches to understanding the pathogenesis of disease and mammalian development presented and critically discussed by faculty, fellows and students. Topics include Mendelian and non-Mendelian diseases, imprinting, homologous recombination, statistical methods, genetic epidemiology and cell cycle dependent expression. (Same course as course 291.) (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. spring 15)

410A. Molecular Medicine (4)
Lecture—3 hours; discussion—3 hours; web virtual lecture—1 hour. Prerequisite: consent of instructor. Restricted to Medical Students only. Basic chemistry of proteins and nucleic acids. Includes an introduction to cancer biology and a full discussion of carbohydrate metabolism. Molecular aspects of human disease are highlighted throughout the course. (P/F grading only; deferred grading only, pending completion of sequence.)—F, Su. (F, Su.) Sweeney
(change in existing course—eff. summer 15)

491. Seminar in Genetic Approaches to Pathogenesis of Human Disease (1)
Seminar—1 hour. Prerequisite: student in Genetics Graduate Group or consent of instructor. Current genetic approaches to understanding the pathogenesis of disease and mammalian development presented and critically discussed by faculty, fellows and students. Topics include Mendelian and non-Mendelian diseases, imprinting, homologous recombination, statistical methods, genetic epidemiology and cell cycle dependent expression. (Same course as course 291.) (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. spring 15)

497T. Tutoring in Biological Chemistry (1-5)
Tutoring—3-15 hours. Prerequisite: advanced standing or consent of instructor. Assist instructor by tutoring medical students in preparation for one of the departmental courses in the required curriculum of the School of Medicine. (H/P/F grading only)
(change in existing course—eff. spring 15)

Medicine: Cardiology

New and changed courses in Cardiology (CAR)
Professional

401. Clinical Cardiology Clerkship: Kaiser (3-18)
Clinical activity—1-5 hours. Prerequisite: third- and fourth-year medical students with advance approval by Division of Cardiology. Limited enrollment. Emphasis placed on history taking and physical examination of pediatric and adult patients with congenital and acquired cardiovascular disease. Hospitations in CCU and elsewhere. Roles of ECG, PCG, and cardiac fluoroscopy, etc., in office cardiology will be evaluated. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. fall 14)

460. Cardiology Clinical Clerkship (3-18)
Clinical activity—2-12 hours. Prerequisite: Internal Medicine 430, third- and fourth-year medical students in good academic standing with consent of instructor. Limited enrollment. Participation with members of subspecialty consultation service in initial clinical evaluation, work-up, management, and follow-up of patients with cardiologic disorders. Two outpatient clinics per week. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. fall 14)

461. Management of Coronary Artery Disease: Coronary Care Unit (3-18)
Clinical activity. Prerequisite: completion of second year of medical school and advance approval by Division of Cardiology. Limited enrollment. Research in laboratory and exercise testing to be determined by instructor. Current methods of clinical research involving certain aspects of diagnosis and treatment. Includes acute coronary care, hemodynamic monitoring, stress testing, cardiac catheterization, patho-

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; DivDom—Domestic Diversity; Writ—Writing Experience

AGCH=American Cultures; DD=Domestic Diversity; OL=Oral Skills; QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience
Quarter Offered: F-Fall, W-Winter, S-Spring, Su-Summer; 2015-2016 offering in parentheses
logic correlations and the modern approach to therapy, both medical and surgical, based on patho-physiologic mechanisms. May be repeated for credit. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] (change in existing course—eff. fall 14)

493. Gender Specific Medicine SSM (6)
Lecture—5 hours; laboratory—10 hours; laboratory—16 hours; clinical activity—4 hours. Prerequisite: consent of instructor. UC Davis School of Medicine students only. Special Studies Module, a four week course on the topic: Basic Science Principles Relating to Gender Specific Medicine. (Same course as Obstetrics & Gynecology 493.) (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] Sweet, Villablanca (change in existing course—eff. fall 14)

498. Special Group Study: EKG Unit (1-12)
Prerequisite: medical student with advance approval by monthly attending faculty. Limited enrollment. Special group study in cardiology for medical students in EKG unit. May include lectures, directed reading, and/or discussion groups. May be repeated for credit. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] (change in existing course—eff. fall 14)

Medicine: Dermatology

New and changed courses in Dermatology (DER)

Professional

475. Telehealth in Dermatology (6)
Clinical activity—4 hours; project—36 hours. Restricted to Medical students. Introduction to the application of telehealth in dermatology to provide diagnoses, consultation, treatment, and education. Participate in teledermatology clinics with remote sites throughout California, conduct telehealth project(s), and review the latest literature in telehealth application in improving healthcare access. May be repeated up to six units for credit for additional time needed to complete telehealth project or to work on new telehealth projects. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] Armstrong (change in existing course—eff. winter 12)

495. Wound Healing: From Bench to Bedside (6)
Clinical activity—12 hours; laboratory—8 hours; autotutorial—15 hours; term paper. Prerequisite: consent of instructor. Restricted to medical students only. An integrated, multi-disciplinary approach to clinical soft tissue wound healing.—F, W, S, Su. [F, W, S, Su] Isseroff (change in existing course—eff. winter 15)

Medicine: Emergency Medicine

New and changed courses in Internal Medicine—Emergency Medicine (EMR)

Lower Division

92. Emergency Medicine Clinical Research Internship (1-4)
Prerequisite: undergraduate student in good academic standing at UC Davis; consent of instructor. Intended to give the undergraduate student an opportunity to conduct “hands-on” clinical research in the Emergency Department. Through the lecture/discussion, students will learn the basics of conducting and developing clinical research studies, using examples from ongoing studies. May be repeated for credit up to four units. Units awarded will depend on hours worked.—F, W, S, Su. [F, W, S, Su] Panacke (change in existing course—eff. spring 15)

Upper Division

199A. Special Study for Advanced Undergraduates (4-12)
Prerequisite: experienced RA’s who have successfully performed in the EMRAP program for a minimum of 3 quarters; consent of instructor; must have database skills. For students interested in working on specific EM projects in a more extensive way. Must commit at least four hours per week for two quarters. Will be awarded credit upon completion of course 199B. (Deferred grading only, pending completion of sequence.)—F, W, S, Su. [F, W, S, Su] Panacke (change in existing course—eff. fall 14)

Professional

435. Wilderness Medicine (3-6)
Lecture/discussion—20 hours; clinical activity—12 hours; independent study—8 hours. Prerequisite: consent of instructor. Elective is designed as an introduction for students who want to explore how physicians can interact with the environment in various conditions through lectures, hands-on field experience, and case-based learning. (H/P/F grading only.)—Bing (new course—eff. summer 14)

450. Ambulatory Externship in Emergency Medicine (3-18)
Restricted to MS4 students in good standing; externships/away rotations only. Credit will be given for approved non-AI Emergency Medicine courses at other institutions to which there is not an equal learning experience at UC Davis. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] Jones (change in existing course—eff. fall 14)

465. Externship in Emergency Medicine (3-9)
Clinical activity—36 hours; lecture/discussion—4 hours. Prerequisite: satisfactory completion of Medicine, Surgery, and Pediatrics. Students complete clinical shifts in the Emergency Department, functioning as Interns. Treat a wide variety of patients and problems under the supervision of the EM Attending. Students are expected to attend conferences and present in clear, concise fashion. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] Jones (change in existing course—eff. summer 15)

480. Understanding Health Policy: A Focus on Analysis and Translation (1-6)
Lecture—4 hours; discussion—16 hours; independent study—10 hours. Prerequisite: consent of instructor. The paradigm of healthcare delivery in the US is changing rapidly. To prepare the next generation of physician leaders, this course will provide students with the skills, tools, and knowledge needed to impact decisions made at the policy level. (H/P/F grading only.)—F, W, S, Su. [F, W, S, Su] Moulin (change in existing course—eff. fall 15)

493A. Teaching the Basic Sciences SSM (2)
Lecture—6 hours; lecture/laboratory—8 hours; laboratory—30 hours; tutorial—10 hours. Prerequisite: consent on instructor. Restricted to UC Davis School of Medicine students only. Special Studies Module, a yearlong in progress course to teach lecture and discussion education technique and theory. (Deferred grading only, pending completion of sequence.) (H/P/F grading only.)—Su. [S, Su] Barnes, Laurin (change in existing course—eff. fall 14)

Medicine: Family and Community Medicine

New and changed courses in Medicine—Family and Community Medicine (FAP)

Professional

430. Family Medicine Clerkship (6-12)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Family Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F, W, S. [F, W, S, Su] Eidson-Ton, Srinivasan (change in existing course—eff. spring 15)

430FA. SJVP Longitudinal Primary Care Clerkship at UCSF Track 1 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Primary Care Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (S.) Eidson-Ton, Srinivasan (change in existing course—eff. spring 15)

430FB. SJVP Longitudinal Primary Care Clerkship at UCSF Track 1 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Primary Care Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (S.) Eidson-Ton, Srinivasan (change in existing course—eff. spring 15)

430FC. SJVP Longitudinal Primary Care Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Primary Care Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (F.) Eidson-Ton, Srinivasan (change in existing course—eff. spring 15)

430FD. SJVP Longitudinal Primary Care Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Primary Care Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (F.) Eidson-Ton, Srinivasan (change in existing course—eff. spring 15)
430FE. SJVP Longitudinal Primary Care Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. On-going patient write-ups, rounds, conferences are required. [H/P/F grading only; deferred grading only, pending completion of sequence.]—W. (W.) Eidson-Ton, Srinivasan [new course—eff. spring 15]

430FF. SJVP Longitudinal Primary Care Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. On-going patient write-ups, rounds, conferences are required. [H/P/F grading only; deferred grading only, pending completion of sequence.]—W. (W.) Eidson-Ton, Srinivasan [new course—eff. spring 15]

430K. ACE-PC Family Medicine Clerkship (6)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Longitudinal family medicine clerkship for ACE-PC Program. [H/P/F grading only; deferred grading only, pending completion of sequence.]—S. (S.) Eidson-Ton, Srinivasan [new course—eff. spring 15]

430KA. ACE-PC Family Medicine Clerkship A (1.5)
Clinical Activity—45 hours; lecture—2 hours; Workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Longitudinal family medicine clerkship for ACE-PC Program. [H/P/F grading only; deferred grading only, pending completion of sequence.]—S. (S.) Eidson-Ton, Srinivasan [new course—eff. summer 15]

430KB. ACE-PC Family Medicine Clerkship B (1.5)
Clinical Activity—45 hours; lecture—2 hours; Workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Longitudinal family medicine clerkship for ACE-PC Program. [H/P/F grading only; deferred grading only, pending completion of sequence.]—F. (F.) Eidson-Ton, Srinivasan [new course—eff. summer 15]

430KC. ACE-PC Family Medicine Clerkship C (1.5)
Clinical Activity—45 hours; lecture—2 hours; Workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Longitudinal family medicine clerkship for ACE-PC Program. [H/P/F grading only; deferred grading only, pending completion of sequence.]—W. (W.) Eidson-Ton, Srinivasan [new course—eff. summer 15]

430KD. ACE-PC Family Medicine Clerkship D (1.5)
Clinical Activity—45 hours; lecture—2 hours; Workshop—2 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Longitudinal family medicine clerkship for ACE-PC Program. [H/P/F grading only; deferred grading only, pending completion of sequence.]—S. (S.) Eidson-Ton, Srinivasan [new course—eff. summer 15]

430R. Rural PRIME Family Medicine Clerkship (12)
Clinical activity—45 hours; lecture—2 hours; workshop—2 hours. Eight week primary care clerkship for rural prime third year medical students. Eight weeks of family medicine training at a rural site. [H/P/F grading only;]—F, S, Su. [F; W, Su; S] Eidson-Ton, Srinivasan [new course—eff. spring 15]

431. Primary Care Continuity Clinic (1)
Clinical activity—4 sessions; project—1 session. Prerequisite: completion of the Pre-Clinical Curriculum; consent of instructor. Longitudinal component of the third-year primary care curriculum. Student attends their clinic roughly 18 half-days over the course of the year, working one-on-one with a primary care preceptor. [H/P/F grading only;]—S. (S.) Eidson-Ton, Schwartz, Srinivasan [new course—eff. spring 15]

431A. Primary Care Continuity Clinic (1)
Clinical activity—4 sessions; project—1 session. Prerequisite: completion of the Pre-Clinical Curriculum; consent of instructor. Longitudinal component of the third-year primary care curriculum. Student attends their clinic roughly 18 half-days over the course of the year, working one-on-one with a primary care preceptor. [H/P/F grading only; deferred grading only, pending completion of sequence.]—W. (W.) Eidson-Ton, Schwartz, Srinivasan [new course—eff. spring 15]

431B. Primary Care Continuity Clinic (1)
Clinical activity—4 sessions; project—1 session. Prerequisite: completion of the Pre-Clinical Curriculum; consent of instructor. Longitudinal component of the third-year primary care curriculum. Student attends their clinic roughly 18 half-days over the course of the year, working one-on-one with a primary care preceptor. [H/P/F grading only; deferred grading only, pending completion of sequence.]—S. (S.) Eidson-Ton, Schwartz, Srinivasan [new course—eff. spring 15]

431C. Primary Care Continuity Clinic (1)
Clinical activity—4 sessions; project—1 session. Prerequisite: completion of the Pre-Clinical Curriculum; consent of instructor. Longitudinal component of the third-year primary care curriculum. Student attends their clinic roughly 18 half-days over the course of the year, working one-on-one with a primary care preceptor. [H/P/F grading only; deferred grading only, pending completion of sequence.]—F. (F.) Eidson-Ton, Schwartz, Srinivasan [new course—eff. spring 15]

431D. Primary Care Continuity Clinic (1)
Clinical activity—4 sessions; project—1 session. Prerequisite: completion of the Pre-Clinical Curriculum; consent of instructor. Longitudinal component of the third-year primary care curriculum. Student attends their clinic roughly 18 half-days over the course of the year, working one-on-one with a primary care preceptor. [H/P/F grading only; deferred grading only, pending completion of sequence.]—S. (S.) Eidson-Ton, Schwartz, Srinivasan [new course—eff. spring 15]

444. Advanced Preceptorship in Family Medicine (3-18)
Clinical activity—40 hours. Prerequisite: completion of third-year primary care plus clerkship or consent of instructor. Open to medical students only. Precept- orship with primary care physicians in a variety of settings. Acquiring skills to evaluate and develop a treatment plan for patients with common medical problems seen by primary care physicians in an outpatient setting. May be repeated up to 18 units of credit. [H/P/F grading only;]—F, W, S, Su. Eidson-Ton, Srinivasan [change in existing course—eff. fall 14]
Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (F) Aronowitz, Jahl (change in existing course—eff. spring 15)

430FC. SJVP Longitudinal Medicine Clerkship at UCSF Track 1 (4)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (F) Aronowitz, Jahl (change in existing course—eff. spring 15)

430FD. SJVP Longitudinal Medicine Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. (H/P/F grading only; deferred grading only, pending completion of sequence.)—F. (F) Aronowitz, Jahl (new course—eff. spring 15)

430FE. SJVP Longitudinal Medicine Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. (H/P/F grading only; deferred grading only, pending completion of sequence.)—W. (W) Aronowitz, Jahl (new course—eff. spring 15)

430FF. SJVP Longitudinal Medicine Clerkship at UCSF Track 2 (4)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. (H/P/F grading only; deferred grading only, pending completion of sequence.)—S. (S) Aronowitz, Jahl (new course—eff. spring 15)

460. Correctional Health Care Clerkship (1-4)
Clinical activity—full time. Prerequisite: fourth-year medical student in good academic standing; consent of instructor. Covers Correctional Health delivery and the effects of detention and incarceration on health status. Special emphasis on problems unique to health care delivery in a prison setting. Student will spend time in clinical settings at three prison facilities. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Silva (change in existing course—eff. winter 15)

461. Mather VA Internal Medicine AI (6)
Clinical Activity—50 hours; lecture/discussion—5 hours; independent study—5 hours. Prerequisite: consent of instructor. Limited enrollment. Acting Intern in Internal Medicine for qualified 4th year Medical Students from the UC Davis School of Medicine at the Sacramento VA Hospital. Experiences will somewhat mirror those of AIIs at UCSDMC. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Jagadeesan, Tran (new course—eff. summer 14)

463. Acting Internship in Medicine Intensive Care Unit (MICU) (3-6)
Clinical activity—40 hours. Prerequisite: completion of third year in medical school; consent of Director of MICU. Limited enrollment. At UCSDMC, student functions as acting intern on MICU service and direction of medical resident and staff. Responsibility for patients admitted to MICU. On call in hospital every fourth night. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Sanrock (change in existing course—eff. winter 16)

493A. Teaching the Basic Sciences SSM (6)
Quarter Offered: F, W, S, Su. (F, W, S, Su.) Aronowitz, Johl (change in existing course—eff. fall 15)

493B. Teaching the Basic Sciences SSM (2)
Quarter Offered: spring only; deferred grading only, pending completion of sequence.)—F, W, S, Su. (F, W, S, Su.) Keenan (change in existing course—eff. winter 15)

493C. Teaching the Basic Sciences SSM (2)
Quarter Offered: spring only; deferred grading only, pending completion of sequence.)—F, W, S, Su. (F, W, S, Su.) Keenan (change in existing course—eff. winter 15)

Medicine: Internal Medicine—General Medicine

New and changed courses in Internal Medicine—General Medicine (GMD)

Professional

460. General Medicine Consults (1-18)
Clinical activity (inpatient-outpatient service)—40 hours. Prerequisite: fourth-year medical students with consent of instructor; a general medicine clerkship. Limited enrollment. Supervised opportunity to site in the entire spectrum of medical problems encountered by a general internist. Student spends time in General Medicine Clinic and on the General Medicine Consult Service. Consultation Service is particularly concerned with medical evaluation of surgical patients. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Keenan (change in existing course—eff. winter 15)

493A. Teaching the Basic Sciences SSM (6)
(canceled course—eff. fall 15)

493B. Teaching the Basic Sciences SSM (2)
(canceled course—eff. winter 16)

493C. Teaching the Basic Sciences SSM (2)
(canceled course—eff. spring 16)

Medicine: Internal Medicine—Hematology-Oncology

New and changed courses in Internal Medicine—Hematology-Oncology (HON)

Professional

420. Oncology (4)
Lecture/discussion—2 hours. Prerequisite: approval by the SOM Committee on Student Promotions. Restricted to Medical student only; students must pass all Year 1 SOM courses. Covers the principles of oncology and the pathophysiology of specific, common cancers correlated with organ systems. (H/P/F grading only)—F. (F) Welborn (change in existing course—eff. fall 15)

470. Practicum in Care of the Terminally Ill (3-6)
Clinical activity—40 hours; lecture/discussion—10 hours. Prerequisite: completion of 3rd year medical school; completion of Medicine Care Clerkship; consent of the instructor. Limited enrollment. Active participation in all inpatient/outpatient clinical activities, attendance at specific lectures and conferences at UCD Medical Center covering the field of nephrology and fluid-electrolyte disorders. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Yun (change in existing course—eff. winter 15)

Medicine: Internal Medicine—Pulmonary Medicine

New and changed courses in Internal Medicine—Pulmonary Medicine (PUL)

Professional

470. Practicum in Care of the Terminally Ill (3-6)
Clinical activity—40 hours; seminar—5 hours. Prerequisite: consent of instructor. Restricted to fourth-year Medical students in good standing. Work with hospice interdisciplinary team. Direct experience in the care of patients with illnesses where no cure is possible. Emphasis on symptom relief, end of life issues, physician assisted suicide. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) McMillan (change in existing course—eff. winter 15)
480. Pulmonary-Critical Care Medicine Insights (1-3)
Clinical activity—3-9 hours. Prerequisite: student in good academic standing; consent of instructor. Attend respiratory outpatient clinics and in-patient pulmonary consultation rounds and medical intensive care rounds. Introduction to diagnosis and treatment of common pulmonary problems. Offered irregularly. (P/F grading only)—F, W, S, Su. (F, W, S, Su) Stollenwerk
(change in existing course—eff. fall 14)

Medicine: Medical Microbiology

New and changed courses in Medical Microbiology (MMI)

Upper Division
188. Human Immunology (3)
Lecture—3 hours. Prerequisite: undergraduate level introductory biology course. Human immune system and mechanisms of immunity. Basic components and function of immune system. Molecular basis of immune response; basic cellular and molecular mechanisms. Interactions between cells of immune system producing immune responses; regulating molecules. —S. (S.) Torres
(change in existing course—eff. spring 16)

Graduate
200D. Comparative Analysis of Animal Models of Infectious Diseases (1)
Lecture/discussion—3 hours. Prerequisite: Microbiology 200A or consent of instructor. Study of mechanisms involved in microbial interactions within a host environment. The following principles are basic to understanding these interactions: host recognition, invasion, competence and growth, and host defense. —W. (W.)

(change in existing course—eff. summer 14)

210A. Critical Analysis of Contemporary Research on Animal Models of Human Infectious Diseases (1)
Lecture/discussion—1 hour. Prerequisite: students funded by the Animal Models of Infectious Diseases Training Grant. Limited enrollment. Topics will include diverse vertebrate and invertebrate models of human infectious diseases. May be repeated for credit. (S/U grading only)—W. (W.) Bayris, Slosnick
(change in existing course—eff. winter 15)

210B. Comparative Analysis of Animal Models of Human Infectious Diseases (1)
Lecture/discussion—1 hour. Prerequisite: students funded by the Animal Models of Infectious Diseases Training Grant, others by consent of instructor. Limited enrollment. Compares the major vertebrate and invertebrate animal models that are used most commonly to study human infectious disease, including mouse, nonhuman primate, Caenorhabditis elegans, and drosophila. May be repeated for credit. Offered in alternate years. (S/U grading only)—W. Bevins, Slosnick
(change in existing course—eff. winter 15)

215. Medical Parasitology (3)
Lecture—1.5 hours; discussion—1.5 hours. Prerequisite: graduate student with consent of instructor. Epidemiology, pathogenesis, diagnostic methods and current literature discussion of protozoa, helminths and arthropods of medical importance. Offered in alternate years. —S. Luckhart
(change in existing course—eff. summer 14)

280. The Endogenous Microbiota in Lifespan Health and Disease (3)
Lecture—3 hours. Prerequisite: graduate standing. Recent research into host-associated microbial communities has yielded important insights into the microbial communities inhabiting mucosal surfaces, and how the composition of these communities contributes to normal development, metabolism, education, and immune system function, and disease susceptibility. Not open for credit to students who have completed Infectious Diseases 280. —S. (S.) Baumann, Dandeker, Tools
(change in existing course—eff. summer 14)

Professional
480A. Medical Immunology (2-5)
Lecture—2 hours; laboratory/discussion—0.5 hours. Restricted to Medical Students only. Helping to understand the immune system, the nomenclature and functional significance of the tissues, cells, proteins and genes of the immune system, as well as the normal regulatory mechanisms and pathologic outcomes related to the immune response. (P/F grading only; deferred grading only, Hartigan-O’Connor, Shacklett, Torres, Teuber, Torres
(change in existing course—eff. spring 16)

480B. Medical Microbiology (5.5)
Lecture—2.75 hours; laboratory/discussion—1 hour. Restricted to Medical Students only. Discussion of the diseases caused by infectious agents includes their pathogenesis, clinical manifestations, diagnosis, treatment, epidemiology and prevention. Covers the general properties and diagnostic techniques for bacteria, fungi and viruses. (P/F grading only; deferred grading only, pending completion of sequence)—S. (S.) Luckhart, Mudryj, Tools
(change in existing course—eff. spring 16)

Medicine: Neurology

New and changed courses in Neurology (NEU)

Professional
420. Clinical Neurosciences (2)
Lecture/discussion—1 hour; lecture—1.5 hours. (P/F grading only; deferred grading only, pending completion of sequence)—S. (S.) Luckhart, Mudryj, Tools

(change in existing course—eff. winter 15)

428. Ambulatory and Emergency Room Orthopaedics (3-6)
Clinical activity. Prerequisite: fourth-year medical student in good academic standing; consent of instructor. Introduction to general orthopaedic problems and their management in an outpatient environment, including the emergency room. Student will conduct orthopaedic examinations, present patients to staff rotating through trauma, hand, pediatrics, adult and foot clinics. Orthopaedic physical examination and interpretation of x-rays. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su) Eastman
(change in existing course—eff. winter 16)

462. Community Preceptorship (3-6)
Clinical activity. Prerequisite: fourth-year medical student in good academic standing; consent of instructor. Acquaints student with private practice of orthopaedic in the community setting. Opportunity to observe and assist private practitioners in office, emergency room, operating room and inpatient environment. Student must provide own transportation. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su) Eastman
(change in existing course—eff. winter 16)

Medicine: Obstetrics and Gynecology

New and changed courses in Medicine: Obstetrics and Gynecology (OBG)

Upper Division
192. Shifa Clinic/Student Volunteer (1)
Conference—2 hours; clinical activity—6-6 hours; discussion—1-2 hours. Open to undergraduates only. Supervised work experience in obstetrics and gynecology. May be repeated up to three times for credit. (P/NP grading only)—F, W, S, Su. (F, W, S, Su) Yasmeen
(change in existing course—eff. winter 15)
464. Acting Internship (6)
Clinical activity. Prerequisite: fourth-year medical student consent of instructor. Rotation designed to increase basic knowledge of musculoskeletal abnormalities at clinical level. Attention focused on selective case material. For those students who demonstrate proficiency, responsibility will be similar to that of intern. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Eastham
(change in existing course—eff. winter 16)

Medicine: Pathology

New and changed courses in Medicine: Pathology (PMD)

Professional

407. Advanced Neuropathology (3-18)
Lecture/discussion—40 hours. Prerequisite: third- or fourth-year medical student; consent of instructor. Restricted to Medical students only. Presents an integrated introduction to mechanisms of the central and peripheral nervous system injury. Gain an understanding of pathological mechanisms underlying disease. The anatomic and molecular manifestations of pathologic processes of the CNS and PNS. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Lechman
(change in existing course—eff. fall 15)

410A. General and Endocrine Pathology (2.5)
Lecture—4 hours; laboratory/discussion—4.5 hours. Restricted to Medical students only. Pathologic mechanisms of human disease. Concepts of general pathologic processes, i.e., cell death, inflammation and neoplasia. Endocrine pathology in the context of clinical human disease. Emphasis on integration of clinical practice with gross and histologic images emphasizing team-based learning. (P/F grading only)—W. [W] Olson
(change in existing course—eff. winter 15)

435. Clinical Patient Care in Pathology (3-9)
Clinical activity—24 hours; independent study—7 hours; lecture/discussion—4 hours. Prerequisite: completed one of the following 3rd year clerkships: Family Medicine, Internal Medicine, Surgery, OB/Gyn or Pediatric clerkship. Four-week course is designed to give the third-year medical student an exposure to the diverse roles that pathologists have in clinical patient care. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Gaudard-Edward, Tomic
(new course—eff. summer 15)

440. Surgery-Pathology-Radiology (SPR) Research Laboratory (2)
Lecture/discussion—1 hours; laboratory/discussion—2 hours. Provide future clinicians and scientists with basic clinical and bioengineering laboratory skills to prepare for careers in translational research. (P/F grading only)—F, W, S, Su. [F, W, S, Su] Tran, Wang
(new course—eff. summer 14)

464. Anatomic Pathology (3-6)
Clinical activity—40 hours. Prerequisite: fourth-year Medical Students, consent of instructor. Restricted to Medical, Obstetrics, Gynecology, Anatomic pathology with an emphasis on autopsy and surgical pathology with application to clinical practice. Specimen grossing, frozen sections, microscopic sign-out and conferences. Exposure to cytopathology, histopathology, and clinical pathology is available. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Bishop
(change in existing course—eff. winter 15)

475. Anatomic Pathology Acting Internship (3-9)
Clinical activity—40-80 hours. Prerequisite: completion of course 410 series or equivalent; successful completion of third-year clinical rotations; consent of instructor. Restricted to Medical Students only. Four level course is designed to provide a concentrated experience in Surgical Pathology and Cytopathology. Rotate on the surgical and cytopathology sub-specialty teams and assume responsibility for patient care. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Bishop, Gregg
(change in existing course—eff. summer 15)

499. Research (1-18)
Prerequisite: medical student; consent of instructor. Limited enrollment. Research in experimental, molecular, comparative, and applied pathology. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Bishop, Gregg
(change in existing course—eff. winter 15)

Medicine: Pediatrics

New and changed courses in Medicine: Pediatrics (PED)

Professional

405. Pediatrics Lecture Series (0.5)
Lecture—15 sessions. Prerequisite: consent of instructor. Lecture series covers major topics in pediatrics with case presentations and panels from pediatric subspecialists. Topics include, but are not limited to: cardiology; pulmonaryology; nephrology; gastroenterology; critical care; and primary care pediatrics. May be repeated for credit. (F, F) Gross
(new course—eff. fall 14)

415. Fetal and Neonatal Physiology (1)
Lecture/discussion—4 hours; independent study—4 hours. Prerequisite: consent of instructor. Elective is designed to combine to study a variety of aspects of the physiology, anatomy and biochemistry of the fetus and newborn with relevant clinical examples of disorders in each of the 10 topics that will be discussed. (P/F grading only)—S. [S] Philippus, Subramaniam
(new course—eff. spring 14)

420. Human Genetics (2)
[cancelled course—eff. winter 16]

430. Pediatric Clerkship (12)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Restricted to Medical students only. Eight-week clinical clerkship providing students with the opportunity to learn fundamental skills and develop an understanding for the pediatric patient by participating in nursery, ambulatory and inpatient services at UCSF Fresno. Rounds, conferences, student presentations ongoing. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Butani, Plant
(change in existing course—eff. winter 15)

430F. SJVP Pediatric Clerkship at UCSF (12)
Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Restricted to Medical students only. Eight-week clinical clerkship providing students with the opportunity to learn fundamental skills and develop an understanding for the pediatric patient by participating in nursery, ambulatory and inpatient services at UCSF Fresno. Rounds, conferences, student presentations ongoing. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Butani, Plant
(change in existing course—eff. winter 15)

440A. Acting Internship: General Inpatient Pediatric Clerkship (2-18)
Clinical activity—full time (4 to 12 weeks). Prerequisite: completion of course 430 with grade of B or better; letter of recommendation from Pediatrics faculty. Limited enrollment. The Acting Intern functions in a manner similar to that of a pediatric intern. The Acting Intern takes admissions in the regular sequence and is expected to take night call. The Acting Intern can expect to manage between six and ten patients at a time. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Shah
(change in existing course—eff. winter 15)

460B. Acting Internship: Outpatient Pediatrics (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: completion of course 430 with grade of B or better; letter of recommendation from Pediatrics faculty. Limited enrollment. Supervised experience in pediatric care on outpatient service at UCSF Fresno. Prerequisite: students as “Acting Intern” with attending. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Palmer
(change in existing course—eff. winter 15)

462. Elective in Pediatric Endocrinology (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430; consent of instructor. Limited enrollment. Inpatient and outpatient experience in diagnosis and management of endocrine disorders in children. Laboratory experience and participation in clinical investigation may be arranged. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Payar
(change in existing course—eff. winter 15)

465. Pediatric Specialty Clinic Elective (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430; consent of instructor. Limited enrollment. Supervised experience in a variety of pediatric subspecialties clinics. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Stine
(change in existing course—eff. winter 15)

466. Elective in Pediatric Cardiology (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430. Inpatient and outpatient experience in diagnosis and management of cardiological disorders in children. Laboratory experience and participation in clinical investigation may be arranged. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Berger
(change in existing course—eff. winter 15)

468. Elective in Pediatric Nephrology (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430; consent of instructor. Limited enrollment. Inpatient and outpatient experience in diagnosis and management of renal disorders in children. Laboratory experience and participation in clinical investigation may be arranged. (H/P/F grading only)—F, W, S, Su. [F, W, S, Su] Butani
(change in existing course—eff. winter 15)
469. Elective in Pediatric Infectious Disease (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430; consent of instructor. Limited enrollment. Inpatient and outpatient experience in diagnosis and treatment of infectious diseases of infants and children. Laboratory and clinical investigation may be arranged. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Blumberg
(change in existing course—eff. winter 15)

470. Elective in Pediatric Neurology (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430, Internal Medicine 430, Obstetrics and Gynecology 430, and Pediatrics 430 and consent of instructor. Limited enrollment. Inpatient and outpatient experience in diagnosis and management of neurological disorders in children. Students will also participate in other pediatric subspecialty clinics which serve children with neurological disorders. This course does not satisfy the fourth year neurology requirement. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Chang
(change in existing course—eff. winter 15)

471. Elective in Pediatric Gastroenterology (3-18)
Clinical activity—full time (2 to 12 weeks). Prerequisite: satisfactory completion of course 430; consent of instructor. Limited enrollment. Inpatient and outpatient experience in diagnosis and management of gastrointestinal disorders in children. Laboratory experience and participation in clinical investigation may be arranged. Limited enrollment. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Kawato
(change in existing course—eff. winter 15)

476. Acting Internship in Pediatric Intensive Care (6-18)
Clinical activity—full time (4 to 12 weeks). Prerequisite: completion of course 430 with grade of A or consent of instructor of record; letter of recommendation from Pediatrics faculty member. Limited enrollment. Evaluation and support of critically ill infants and children. In general, student expected to take night call every third night during rotation. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Chan, Phillips, Tache
(change in existing course—eff. winter 15)

493C. Fetal and Neonatal Physiology SSM (6)
Lecture/discussion—24 hours; clinical activity—8 hours. Prerequisite: consent of instructor. Elective is available for students interested in exploring the fascinating world of the fetus and neonate. The elective is designed to combine the basic sciences with relevant clinical examples of disorders. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Gerritz, Shin
(change in existing course—eff. winter 15)

Medicine: Pharmacology and Toxicology

New and changed courses in Medicine: Pharmacology and Toxicology (PHA)
Graduate

225. Gene Therapy (3)
Lecture/discussion—3 hours. Prerequisite: Genetics 201C, Molecular and Cellular Biology 214, or equivalent. Gene therapy from basic concepts to clinical applications. Topics include the human genome and genetic variation, genetic diseases, methods to manipulate gene expression, viral and non-viral delivery vectors, history and progress of gene therapy, case studies, and ethical issues. (Same course as Genetics 225)—S. (S.) Anderson
(new course—eff. fall 14)

250. Functional Genomics: From Bench to Bedside (3)
Lecture/discussion—3 hours. Prerequisite: Genetics 201C, Molecular and Cellular Biology 214, or equivalent. Functional genomics (how genetic variation and epigenomics affect gene expression), with an emphasis on clinical relevance and applications. Topics include genetic variation and human disease, cancer therapeutics, and biomarker discovery. (Same course as Genetics 250)—R. (R.) Diaz, LaSalle, Segal
(new course—eff. spring 15)

Professional

400A. Pharmacology (2)
Lecture—1 hour; discussion/laboratory—0.3 hours. Prerequisite: approval by School of Medicine Committee on Student Progress. Restricted to Medical student only. Principles in pharmacology, including pharmacokinetics, drug metabolism and the actions, uses and toxicities of the major classes of drugs. (Deferred grading only; pending completion of sequence. P/F; grading only)—W, S. (W, S.) Gelli, Wulf
(change in existing course—eff. winter 15)

400C. Pharmacology (3.5)
Lecture—2 hours; discussion—0.5 hours. Prerequisite: Approval by School of Medicine Committee on Student Progress; medical student only; successful completion of courses 400A and 400B. Treatment of respiratory and cardiovascular disease, central nervous system drugs, GI, Toxicology and chemotherapy. Specific topics include: asthma, chronic obstructive pulmonary disease, hypertension, congestive heart failure, and the treatment of arrhythmias. Pain Management, depression, psychosis, acid reflux, IBS, and toxicology. (H/P/F; grading only; deferred grading only; pending completion of sequence) (F.) W., S. (W, S.) Gerritz
(change in existing course—eff. fall 15)

400D. Pharmacology (2)
cancelled course—eff. spring 16

Medicine: Physical Medicine and Rehabilitation

New and changed courses in Medicine: Physical Medicine and Rehabilitation (PMR)
Professional

405. Healthy Living: Leading by Example (1.5)
Lecture—4 sessions; discussion—2 sessions; laboratory—4 sessions; clinical activity—1 session. Prerequisite: consent of instructor. Course is to improve the physical and mental health of participating students while supplementing their medical education with relevant specific concepts. May be repeated for credit. (P/F; grading only)—F. (F.) Gerritz
(new course—eff. fall 14)

405A. Healthy Living: Leading by Example (1)
Lecture—4 sessions; discussion—2 sessions; laboratory—4 sessions; clinical activity—1 session. Prerequisite: consent of instructor. Course is to improve the physical and mental health of participating students while supplementing their medical education with specific concepts. May be repeated for credit. (P/F; grading only; deferred grading only; pending completion of sequence) (new course—eff. fall 14)

405B. Healthy Living: Leading by Example (0.5)
Lecture—4 sessions; discussion—2 sessions; laboratory—4 sessions; clinical activity—1 session. Prerequisite: consent of instructor. Improve the physical and mental health of participating students while supplementing their medical education with specific concepts. May be repeated for credit. (P/F; grading only; deferred grading only; pending completion of sequence) (W. (W.) Gerritz
(new course—eff. fall 14)

493. Applied Musculoskeletal Anatomy: Sports & Spine SSM (6)
Lecture—5 hours; lecture/laboratory—10 hours; laboratory—16 hours; clinical activity—4 hours. Prerequisite: consent of instructor. Restricted to UC Davis School of Medicine students only. This four week module will review the anatomy and biomechanics of the musculoskeletal system as well as its associated pathology. The students will be instructed on appropriate musculoskeletal exam techniques and logical approach to the patient in the clinical setting. (H/P/F; grading only)—F, W, S, Su. (F, W, S, Su.) Shin
(change in existing course—eff. winter 15)

Medicine: Psychiatry

New and changed courses in Medicine: Psychiatry (PSY)

Professional

403. Fundamentals of Clinical Psychiatry (3)
Clinical activity—1 hour; lecture—3 hours. Prerequisite: consent of instructor. Restricted to School of Medicine students only. The course provides a broad introduction to the field of psychiatry. Students will be introduced to general diagnostic and pharmacological approaches. (Same course as Psychiatry 403.)—F, W, S. (W, S.) Clancy, Gelli
(change in existing course—eff. winter 15)

410. Klingenstein Summer Elective (2.5)
Clinical activity—20 hours. Prerequisite: consent of instructor. During this “mini-clerkship,” fellows will attend clinics, in-patient settings, and clinicians’ offices. They will meet weekly to present cases and review current literature, and will complete a summary narrative at the end of the experience. (P/F; grading only)—S. (S.) Horst
(new course—eff. spring 15)

410L. Klingenstein Longitudinal Elective (2)
Clinical activity—5 sessions; laboratory/discussion—10 sessions; discussion—2 sessions. Prerequisite: consent of instructor. Year-long mentoring program provides clinical exposure to child and adolescent psychiatric healthcare during a medical student’s preclinical years. (P/F; grading only; deferred grading only; pending completion of sequence) (W, S. (W, S.) Horst
(change in existing course—eff. fall 13)

414. Psychosomatic Medicine Clerkship (3-12)
Clinical activity—32 hours; discussion—8 hours. Prerequisite: Psychiatry Clerkship or consent of instructor; medical students only. A large university hospital service in which the student functions as a member of the team in evaluation, management, and psychiatric liaison with other medical specialties. Intensive supervision from senior staff and psychiatrists.
ric residents. May be repeated twice for credit. [H/P/F grading only.]—F; W, S, Su; [F; W, S, Su; Su.]

(change in existing course—eff. fall 14)

420. Acting Internship in Psychiatry (62) Clinical activity—40 hours. Prerequisite: course 430 and/or consent of course coordinator. Acting intern position with close faculty supervision with emphasis on biological psychiatry, psychopharmacology and psychological aspects appropriate to diagnostic and long-term patient management. [H/P/F grading only.]—F, W, S, Su; [F, W, S, Su; Su.]

(change in existing course—eff. fall 14)

430FA. SJVP Longitudinal Psychiatry Clerkship at UCSF Track 1 (4) Clinical activity—45 hours. Prerequisite: approval by School of Medicine Committee on Student Progress; consent of instructor. Longitudinal Clerkship runs concurrently with Primary Care and Psychiatry for 24 weeks at UCSF Fresno. Time is spent in direct patient care situations under the guidance of faculty. Ongoing patient write-ups, rounds, conferences are required. May be repeated for credit. [H/P/F grading only; deferred grading only; pending completion of sequence.]—S, [S] Ton

(new course—eff. spring 15)

493. Culture, Medicine and Society (6) Seminar—12 hours; clinical activity—16 hours; independent study—8 hours; discussion—4 hours. Prerequisite: consent of instructor. Restricted to UC Davis School of Medicine students only. Students will learn about the epidemiological significance of health disparities and barriers to access to health care. Covers [1] Epidemiology/Health Disparities; [2] Society and Medicine; [3] Cinemeducation; [4] Reflection/Integration. [H/P/F grading only.]—S, [S]

(change in existing course—eff. winter 15)

Medicine: Public Health Sciences

New and changed courses in Medicine: Public Health Sciences (SPH)

Upper Division

101. Introduction to Public Health (3) Lecture—3 hours. Prerequisite: undergraduate standing. Provide basic concepts and controversies in public health, basic science of public health, social and behavioral factors in health and disease, environmental and occupational health issues, the relationship of public health to the medical care system and health care reform. GE credit: SciEng or SocSci | SE or SS.—W, S, [W, S] McCurdy

(change in existing course—eff. winter 16)


(new course—eff. fall 15)

160. General Health Education and Prevention (5) Lecture—4 hours; discussion—1 hour. Open to students in the internship program for the Health Education Program only; class size limited to 50 students. Topics include addiction, substance abuse/prevention, nutrition, stress management, physical fitness, body image, reproductive anatomy and physiology, contraceptive options, safer sex, sexual health, healthy relationships, and other general wellness and health promotion topics. Practice in peer counseling and outreach presentations. [P/NP grading only.]—S, [S] Ferguson

(change in existing course—eff. winter 15)

Graduate

204. Globalization and Health: Evidence and Policies (3) Lecture—3 hours. Open to graduate student standing. In-depth integration of advanced epidemiological concepts. Provides an overview of the evidence on the multiple effects of globalization policies on health.—F, [F] De Vogli

(new course—eff. fall 15)

207. Advanced Epidemiologic Methodology (4) Lecture/discussion—4 hours. Prerequisite: course 206. In-depth integration of advanced epidemiological concepts. Theory, methods, and applications for observational studies including random and systematic error, confounding, confounders, causal inference, effect modification, internal and external validity, estimability, and interpretation of effect measures, and advanced study designs. [Same course as Epidemiology 206.]—S, [S] Hertz-Picciotto, Kass

(new course—eff. winter 16)

209. History of Public Health in Public Health (2) Lecture—0.5 hours; discussion—1.5 hours. Introduction to the history of epidemiology in solving major public health problems. Original historical articles will be read and discussed. Topics may include infectious disease, accidents/adverse events, nutritional deficiencies, community vaccination trials, occupational exposures, cancer, birth defects, cardiovascular disease, and smoking. [Same course as Epidemiology 209.]—W, [W] Hertz-Picciotto

(new course—eff. fall 14)

211. Infectious Disease Epidemiology (3) Lecture—2 hours; discussion—1 hour. Prerequisite: introductory epidemiology course (e.g., Epidemiology 205). Infectious disease epidemiology and prevention, with emphasis on human and veterinary diseases of global health importance. Major global health epidemics and challenges of infectious diseases, by mode of transmission. [Same course as Epidemiology 231.]—W, [W] DeBiemer

(change in existing course—eff. winter 15)

223. Obesity Prevention in Community Settings (3) Lecture/discussion—3 hours. Prerequisite: consent of instructor. Look at causes of the obesity epidemic in the U.S.; identify and critically assess the research literature on various prevention strategies; understand, and apply evidence-based health strategies to combat obesity; and translate the science to a general audience.—F, [F] Cassidy

(change in existing course—eff. spring 15)

245. Biostatistics for Biomedical Science (4) Lecture—4 hours. Prerequisite: Clinical Research 244 or course 244 or the equivalent; consent of instructor. Analysis of data and design of experiments for laboratory data. [Same course as Clinical Research 245.]—W, [W] Kim

(change in existing course—eff. spring 15)

246. Biostatistics for Clinical Research (4) Lecture—4 hours. Prerequisite: course 245 or Clinical Research 245. Emphasizes critical biostatistics for clinical research and biomedical literature. Students will develop understanding for basic planning and analysis of clinical studies and learn to develop collaborations with biostatisticians. [Same course as Clinical Research 246.] May be repeated for credit. Offered in alternate years.—W, [W] Qi

(change in existing course—eff. winter 15)

247. Statistical Analysis for Laboratory Data (4) Lecture—4 hours. Prerequisite: Clinical Research 245 or course 245. Statistical methods for experimental design and analysis of laboratory data including gene expression arrays, RNA-Seq, and mass spec. [Same course as Clinical Research 247.]—S, Rocke

(change in existing course—eff. spring 15)

255. Human Reproductive Epidemiology (3) Lecture—3 hours. Prerequisite: Preventative Veterinary Medicine 405, 406, Physics 220, Physiology 222 or equivalents or consent of instructor. Human reproductive effects and risk of reproductive disorders, examined from macro- and micro-environment...
Medical Physics (3-6)
Graduate
Introduction to Medical Physics—full time (2-6 weeks). Prerequisite: consent of instructor. Goal of the course is to provide an introduction to basic concepts of microeconomic theory that will be explained in the class. —F. W. (F, W) Yoo (new course—eff. fall 14)

465. Externship in Radiation Oncology (3-16)
Clinical activity—30 hours. Prerequisite: consent of instructor. Externship provides in-depth exposure to the field of Radiation Oncology for students who rotation through an affiliated institution. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Friedman (change in existing course—eff. spring 15)

499. Independent Study and Research in Therapeutic Radiology (1-18)
Prerequisite: consent of instructor. Advanced-level research seminar in clinical and/or translational radiation oncology. Work with the course instructor to design a testable hypothesis. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Coleman, Fragoso, Li, Naydev, Monjazeb, Vaughan (change in existing course—eff. fall 14)

Medical Physics—Nuclear Medicine
New and changed courses in Medicine: Radiology—Nuclear Medicine (RONU)

463. Clinical Clerkship in Nuclear Medicine (3-8)
Clinical Activity—full time (2-6 weeks). Prerequisite: satisfactory completion of second-year medical school. Radiology—Diagnostic 461 recommended; consent of instructor. Limited enrollment. Clerkship correlates radiotopic methods with clinical, pathological, and other diagnostic aspects of the patient’s care. Includes patient care under the guidance of a faculty member. Reading assignments, informal projects, and research techniques available. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Shelton (change in existing course—eff. winter 15)

466. Clinical Plastic Surgery Elective (3-9)
Clinical activity—50 hours. Prerequisite: third or fourth-year medical student; Surgery 430; consent of instructor. Total involvement in patient care involving surgical preparation, treatment, operative care, and follow-up. Developing and understanding reconstruction and aesthetic plastic surgery included. Student rotation. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Bold (change in existing course—eff. spring 15)

467. Surgical Oncology (3-9)
Clinical activity. Prerequisite: fourth-year medical student, or third-year medical student with completion of course 430; consent of instructor. Students actively participate in management of patients requiring surgery for cancer, endocrine disease and selected general surgical problems. Cases include malignant melanoma, sarcoma, gastrointestinal cancer, head and neck pathology, and metastatic malignancies. Attending rounds daily. Four teaching conferences weekly. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Young (change in existing course—eff. spring 15)

468. Cardiothoracic Surgery Clerkship (6-9)
Clinical activity. Prerequisite: fourth-year medical student or third-year medical student with completion of course 430; consent of instructor. Student works as an extern on the Cardiothoracic Surgical Service, participating in perioperative management and operations on the heart, lungs, mediastinum, and other thoracic structures. Regularly scheduled teaching conferences are conducted. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Herbst (change in existing course—eff. spring 15)

471. Gastrointestinal Surgery (3-9)
Clinical activity. Prerequisite: fourth-year medical student or third-year medical student with completion of course 430, Internal Medicine 430 and Pediatrics 430; consent of instructor. Student participates on the GI Surgery Service, working under the immediate supervision of the faculty and surgical staff, involving the full spectrum of gastrointestinal diseases performed by the medical student. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Hao (change in existing course—eff. spring 15)

472. Vascular Surgery (3-9)
Clinical activity—full time. Prerequisite: fourth-year medical student or third-year medical student with completion of course 430, Internal Medicine 430 and Pediatrics 430; consent of instructor. Student participates on the vascular surgery service and in the management and repair of peripheral and venous system, exclusive of diseases that require cardiopulmonary bypass for treatment. Includes patient care responsibilities with appropriate supervision. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Dawson (change in existing course—eff. spring 15)

475. Pediatric Surgery (6-9)
Clinical activity. Prerequisite: fourth-year medical student or third-year medical student with completion of course 430; consent of instructor. Care of patients with neonatal congenital surgical problems. Fluid and electrolyte management in infants. General experience with acquired surgical diseases in children. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Martinez (change in existing course—eff. spring 15)

476. Surgical Consult Service (6-9)
Clinical activity. Prerequisite: fourth-year medical student or third-year medical student with completion of course 430; consent of instructor. Students function as acting interns working in parallel with the interns on the service. They consult on all non-trauma
patients in the emergency room and on the wards and also participate in the operating room. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Wisner (change in existing course—eff. spring 15)

477. Clinically Oriented Anatomy (3)
Clinical activity—40 hours. Prerequisite: completion of three years of medical school. Restricted to fourth-year medical student only. Anatomy of selected regions of the body using cadaver dissection, prosections and interactive CD-ROMs. Anatomical relationships relevant to common surgical procedures. Surgical and interventional radiology procedures. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Holcroft (change in existing course—eff. winter 15)

478. Surgical Preceptorship: Off Campus (3-18)
Clinical activity—60 hours. Prerequisite: fourth-year medical student; consent of instructor. Student participates in the preoperative, operative and postoperative care of surgical patients under the supervision of attending staff. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Holcroft (change in existing course—eff. winter 15)

481. Interactive Clinical Case Presentation (ICCP) (3)
Clinical activity—1 hour. Prerequisite: fourth-year medical students; however, course is open for third and fourth year student observers. Course taught as one session (4 hours) per month for three quarters (July to March); students who enroll can earn up to three credits and the minimum requirements will be to attend at least six sessions; students can do all nine sessions and work toward an honor; for the written part students will have to pick two of the nine case presentations and write a detailed paper with a literature review on “The Current management” of that disease; this can in fact be a manuscript submitted for publication with a faculty member as an advisor; maximum of 10-15 students in good standing. Course presentaiton of common clinical scenarios (e.g. chest pain, MI, fever/pneumonia, abdo pain/shicyctis etc.) from various discipline held in an auditorium with real patients exposure. Interactive session to review history, physical findings and case management. Students will be asked to perform H&P. (H/P/F grading only)—F, W, Su. (F, W, Su.) Khatiri (change in existing course—eff. winter 15)

493B. Critically Ill Surgical Patients SSM (5-18)
Clinical activity—full time. Prerequisite: Third-year medical student; physical diagnosis or the equivalent; consent of instructor. Limited enrollment. Clinical experience in diagnosis and treatment of urologic disease. Student participates with house staff, participates in conferences and surgery, and perform initial patient evaluation on new patients. May be repeated for credit. (H/P/F grading only)—F, W, S, Su. (F, W, S, Su.) Holcroft (change in existing course—eff. spring 15)

493C. A Story for a Life: The Arabian Nights (4)
Lecture—4 hours. Exploration of the role and experiences of media technologies in the Arab world. Study of digital and electronic media as well as alternative media practices. Investigation of new trends in political activism and identity formation. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WE.—Radwan, Sharlet (new course—eff. spring 14)

493C. A Story for a Life: The Arabian Nights (4)
Lecture—4 hours. Exploration of the role and experiences of media technologies in the Arab world. Study of digital and electronic media as well as alternative media practices. Investigation of new trends in political activism and identity formation. Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WE.—Radwan, Sharlet (new course—eff. spring 14)

493C. Physiological Principles in SICU SSM (6)
Lecture—5 hours; lecture/laboratory—10 hours; laboratory—16 hours; clinical activity—4 hours. Prerequisite: consent of instructor. Restricted to UC Davis School of Medicine students only. Special Study Module, A four week course on the topic: Care of the Critically Ill Surgical Patient. Use of Physiological Principles to the Care of Patients with Common Surgical Problems. (Same course as Human Physiology 493C) (H/P/F grading only)—F, W, SU. (F, W, Su.) Calo, Holcroft (change in existing course—eff. winter 15)

493L. Introductory Microbiology Laboratory (2)
Lecture—1 hour; laboratory—3 hours. Prerequisite: course 102 (may be taken concurrently). Chemistry 28 or 28A; Chemistry 28B (may be taken concurrently). Introduction to principles and laboratory methods employed in working with microorganisms. Designed for students requiring microbiology for professional school admission. Not open to students who completed course 101 before Spring 2016, or who have completed courses 102L or 104L. (F, W, S. (F, W, S.) Mann (new course—eff. spring 16)

104. General Microbiology (4)
(cancelled course—eff. winter 16)

104L. General Microbiology Laboratory (3)
Lecture—1 hour; laboratory—6 hours. Prerequisite: course 102 (may be taken concurrently). Chemistry 98, 118B, or 129B; consent of instructor. Students must complete a petition for consideration of enrollment; petition available on department of Microbiology and Molecular Genetics website. Principles and laboratory methods employed in working with microorganisms. Designed for students continuing in microbiology, genetics, or biochemistry. Only two units of credit for students who completed course 101 before Spring 2016, or who have completed course 103L. Not open to students who have completed course 102L. GE credit: SciEng | SE, WE.—F, (F, (F) (change in existing course—eff. spring 16)

111. Human Microbiology (3)
Lecture—3 hours. Prerequisite: course 102; Biologica l Sciences 101. Biology of microorganisms that form commensal, mutualistic, and pathogenic relationships with human beings, emphasizing their physi ology, physiology, genetics, and ecology. Effects on human nutrition, development and physiology. Atrophy of the immune system, microbe antibiotic action, and antibiotic resistance. GE credit: SciEng | SE.—F, (S, (F) Stewart (new course—eff. spring 16)

150. Genomes of Pathogenic Bacteria (3)
Lecture—3 hours. Prerequisite: course 102; Biologica l Sciences 101. Molecular genetics and comparative genomics of representative pathogenic bacteria. Roles of mobile genetic elements, lateral gene transfer, and genome rearrangements in pathogen evolution. Mutation, recombination, and complementation as tools for genetic analysis. Content includes close examination of primary research articles. GE credit: SciEng | SE.—S. (S, (F) Stewart (new course—eff. spring 16)

Middle East/South Asia Studies

New and changed courses in Middle East/South Asia Studies (MSA)

Upper Division

121A. Shahnameh: The Persian Book of Kings (4)
Lecture/discussion—3 hours; term paper. In-depth analysis of the Persian Book of Kings (Shahnameh) by Abu’l-Qasim Ferdowsi (d. 1020 CE) in its historical context with a comparative perspective on the role of this work in Persian and world literature. (Same course as Comparative Literature 175.) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WC, WE.—Anooshahr, Sharlet (change in existing course—eff. winter 15)

121C. A Story for a Life: The Arabian Nights (4)
Lecture/discussion—3 hours; term paper. In-depth exploration of The Arabian Nights, the best-known work of premodern Arabic literature and a major work of world literature. Analysis of the work in its historical context and in comparison to other frame tales in world literature. (Same course as Comparative Literature 172 and Arabic 140) Offered in alternate years. GE credit: ArtHum, Div, Wrt | AH, WC, WE.—Radwan, Sharlet (change in existing course—eff. winter 16)

131C. Religion and Media in Arab World (4)
Lecture—4 hours. Exploration of the role and experiences of media technologies in the Arab world. Study of digital and electronic media as well as alternative media practices. Investigation of new trends in political activism and identity formation. Offered in alternate years. (Same course as Religious Studies 166.) GE credit: SocSci | OL, SS, VL, WC, WE.—Miller (new course—eff. fall 14)

181A. Topics in Regional ME/SA Studies (4)
Lecture—3 hours; term paper. Iran & Persian topics for students specializing in region-specific Middle East and South Asia Studies. May be repeated three times for credit. GE credit: ArtHum or SocSci | AH or SS, WC, WE. (change in existing course—eff. winter 15)
New and changed courses in Molecular and Cellular Biology (MCB) 

Upper Division 

121. Advanced Molecular Biology (3) Lecture—3 hours. Prerequisite: Biological Sciences 101 and one course from among Biological Sciences 102, 105, or Animal Biology 102 (Biological Sciences 102, 105 or Animal Biology 102 may be taken concurrently although prior completion is recommended). Structure, expression, and regulation of eukaryotic genes. Chromosome structure and replication; gene sequence, transcription, and RNA processing; protein synthesis and translation control; development, immune system, and oncogenes. Not open for credit to students who have completed course 161. GE credit: SciEng | OL, SE, SL—F, W, S. [F, W, S.] Burgess, Gasser, Harmer, Nastke, Powers.

139. Undergraduate Seminar in Biochemistry (2) Seminar—2 hours. Prerequisite: Biological Sciences 103. Discussion of the historical developments of modern biochemistry or current major research problems. May be repeated two times for credit when topic differs. [P/NP grading only. GE credit: SciEng | OL, SE—F, W, S. [F, W, S.] Callis, Gasser, Nastke, Powers.]

210L. Physiology Laboratory Rotations (5) Laboratory—15 hours. Restricted to Molecular, Cellular and Integrative Physiology (MCP) graduate students. One mandatory rotation and up to two voluntary rotations. Students learn techniques and perform experiments related to particular research problems. At the end of the rotations students give a short talk and hand in a research paper. May be repeated twice for credit. [S/U grading only. —F, W, S. [F, W, S.] Sack, Yarovoy.]

210L. Physiology Laboratory Rotations (5) Laboratory—15 hours. Restricted to Molecular, Cellular and Integrative Physiology (MCP) graduate students. One mandatory rotation and up to two voluntary rotations. Students learn techniques and perform experiments related to particular research problems. At the end of the rotations students give a short talk and hand in a research paper. May be repeated twice for credit. [S/U grading only. —F, W, S. [F, W, S.] Sack, Yarovoy.]

210L. Physiology Laboratory Rotations (5) Laboratory—15 hours. Restricted to Molecular, Cellular and Integrative Physiology (MCP) graduate students. One mandatory rotation and up to two voluntary rotations. Students learn techniques and perform experiments related to particular research problems. At the end of the rotations students give a short talk and hand in a research paper. May be repeated twice for credit. [S/U grading only. —F, W, S. [F, W, S.] Sack, Yarovoy.]

Molecular, Cellular, and Integrative Physiology 

New and changed courses in Molecular, Cellular, and Integrative Physiology (MCP) 

Graduate 

210L. Physiology Laboratory Rotations (5) Laboratory—15 hours. Restricted to Molecular, Cellular and Integrative Physiology (MCP) graduate students. One mandatory rotation and up to two voluntary rotations. Students learn techniques and perform experiments related to particular research problems. At the end of the rotations students give a short talk and hand in a research paper. May be repeated twice for credit. [S/U grading only. —F, W, S. [F, W, S.] Sack, Yarovoy.]

215. Electrophysiology Techniques and Applications (3) Lecture—1.5 hours; discussion—1.5 hours. Broad scope of topics in electrophysiology techniques and applications. [Same course as Pharmacology and Toxicology 215.] [S/U grading only.]—S. [S.] Chen

234. Current Topics in Neurotoxicology (3) Lecture—3 hours. Prerequisite: core courses in one of the following graduate programs: Pharmacology and Toxicology, Agricultural and Environmental Chemistry, Biochemistry and Molecular Biology, Cell and Developmental Biology, Immunology, Molecular Cellular and Integrative Physiology or Neuroscience. Restricted to upper level undergraduate students must obtain permission from the course coordinator. General principles of neurotoxicology, the cell and molecular mechanisms and health impacts of specific neurotoxins and the contribution of neurotoxic compounds to complex neurodegenerative diseases. [Same course as Environmental Toxicology 234 and Molecular Biosciences 234.] Offered in alternate years. —W. Lein

Music 

New and changed courses in Music (MUS) 

Lower Division 


2A. Keyboard Competence, Part 2 (2) Performance—2 hours. Prerequisite: course 6B and course 16B required concurrently; completion of course 2A or demonstration of required keyboard proficiency level on diagnostic exam; consent of instructor. Training to meet the minimum piano requirements for the major in music. Harmonic pro-
24B. Introduction to the History of Music II
Lecture—3 hours. Prerequisite: completion of course 24A or consent of instructor. The history of music from the Romantic Period to the nineteenth century. Intended primarily for majors in music. GE credit: ArtHum, Wrt | AH, VL, WE. —W. (W.)

107A. Computer and Electronic Music
Lecture—3 hours; laboratory—1 hour. Prerequisite: consent of instructor. Limited enrollment. Studies in electronic and computer music composition. The principles and procedures of composition in various electronic media are explored through compositional exercises. GE credit: ArtHum | AH. —W. (W.) Nichols

24C. Introduction to the History of Music III
Lecture—3 hours. Prerequisite: completion of course 24B or consent of instructor. The history of music of the 20th century. Intended primarily for majors in music. GE credit: ArtHum, Wrt | AH, VL, WE. —S. (S.)

107B. Computer and Electronic Music
Lecture—3 hours; laboratory—1 hour. Prerequisite: completion of course 107A or consent of instructor. Limited enrollment. Continuation of course 107A. Offered in alternate years. GE credit: ArtHum | AH, VL. —F. (F.) Ortiz

24A. Introduction to the History of Music I
Lecture—3 hours. Prerequisite: can be concurrent with course 6A or consent of instructor. History of music from the late Baroque to Beethoven. Intended primarily for majors in music. GE credit: ArtHum, Wrt | AH, VL, WE. —F. (F.)

24D. History of Rock Music
Lecture—3 hours. Discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. Rock and the evolution of rock styles in historical and cultural context. For non-majors. GE credit: ArtHum, Wrt | AGCH, AH, DD, WE. —F. (F.)

110A. The Music of a Major Composer: Beethoven
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. The work of Beethoven will be studied in the context of his time and his contemporaries. GE credit: ArtHum, Wrt | AH, VL, WE. —F. (F.)

108A. Orchestration
Lecture—2 hours. Prerequisite: completion of course 108A or consent of instructor. Techniques of orchestration from study of basic instrumental techniques to analysis of orchestral scores and scoring for various instrumental combinations. GE credit: ArtHum | AH, VL. —W. (W.)

110B. The Music of a Major Composer: Stravinsky
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. The work of Stravinsky will be studied in the context of his time and his contemporaries. GE credit: ArtHum, Wrt | AH, VL, WE. —F. (F.)

110C. The Music of a Major Composer: Bach
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. The work of Bach will be studied in the context of his time and his contemporaries. GE credit: ArtHum, Wrt | AH, VL, WE. —F. (F.)

110D. The Music of a Major Composer: Mozart
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. The work of Mozart will be studied in the context of his time and his contemporaries. GE credit: ArtHum, Wrt | AH, VL, WE. —F. (F.)
110E. The Music of a Major Composer: Haydn (4)
Lecture—2 hours; discussion—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. The work of Haydn in the context of his time and his contemporaries. Lectures, discussion/guided listening sessions, and selected readings. For non-majors. Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WC, WE.

(change in existing course—eff. spring 16)

110F. American Masters (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or course 3A or consent of instructor. An overview of American concert music by master composers from Charles Ives to the present. Lectures, discussion/guided listening sessions, and selected readings. For non-majors. Offered in alternate years. GE credit: ArtHum, Wrt | ACGH, AH, DD, VL, WE. — S. (S.) Levy

(change in existing course—eff. spring 16)

110G. Music of a Major Composer—Handel (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: completion of course 10 or course 3A or consent of instructor. An overview of Handel’s music and the context of his time and his contemporaries. Lectures, discussion/guided listening sessions, and selected readings. For non-majors. Offered in alternate years. GE credit: ArtHum, Wrt | AH, VL, WC, WE. — Thomas

(change in existing course—eff. spring 16)

113. Introduction to Conducting (2)
Lecture—1 hour; performance—1 hour. Prerequisite: completion of course 9C or consent of instructor. Principles and techniques of conducting as they apply to both choral and instrumental ensembles. GE credit: ArtHum | AH. — F. W. (F, W) Baldini, Thomas

(change in existing course—eff. spring 16)

114. Intermediate Conducting (2)
Lecture—1 hour; performance—1 hour. Prerequisite: completion of course 10 or 3A or consent of instructor. Intermediate conducting with a continued focus on principles and techniques as they apply to both choral and instrumental ensembles. GE credit: ArtHum | AH. — W. S. (W, S) Baldini, Thomas

(change in existing course—eff. spring 16)

115. History of Film Music (4)
Lecture—3 hours; film viewing—3 hours. Prerequisite: completion of course 10 or course 3A or consent of instructor. Film music from silent films to movies of the past decade. How music supports and shapes film narrative. Use of jazz, rock and classical music in film. Offered in alternate years. Offered irregularly. GE credit: ArtHum, Wrt | AH, VL, WE. — S. (S.) Ortiz

(change in existing course—eff. spring 16)

116. Introduction to the Music of The Beatles (4)
Lecture—3 hours; listening—1 hour. Prerequisite: completion of course 10 or course 3A or consent of instructor. Survey of music of The Beatles, focusing on the songs of Lennon and McCartney. Emphasis on understanding their evolution as musicians, composers and cultural figures. Discussion of their musical influences in wider cultural contexts. GE credit: ArtHum, Wrt | AH, VL, WC. — S. (S.) Reynolds

(change in existing course—eff. spring 16)

121. Topics in Music Scholarship (4)
Seminar—4 hours. Prerequisite: course 6C and course 24C, or consent of instructor. Sources and problems in the historical and/or theoretical study of music selected by the instructor and announced in advance. May be repeated for credit. GE credit: ArtHum | AH, OL. — F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

122. Topics in Analysis and Theory (4)
Seminar—4 hours. Prerequisite: course 6D and course 24DC, or consent of instructor. Analysis of works of a composer or musical style selected by the instructor and announced in advance. Consideration of theoretical issues. May be repeated for credit. GE credit: ArtHum, Wrt | AH, VL, W, S. (F, W, S)

(change in existing course—eff. spring 16)

123. Music as Culture (3)
Lecture/discussion—3 hours. Prerequisite: course 124B or consent of instructor. Introduction to the study of music in cross-cultural perspective. Basic theories and frameworks of ethnomusicology; in-depth case studies of three musical traditions from around the world. Intended for music majors. Offered in alternate years. GE credit: ArtHum | AH, WC, WE. — F. (F) Lee, Spiller

(change in existing course—eff. spring 16)

124A. History of Western Music: Middle Ages to 1600 (3)
Lecture—3 hours. Prerequisite: course 24D or consent of instructor. Historical survey of composers and musical styles from the Middle Ages to the beginning of the 17th century. GE credit: ArtHum, Wrt | AH, VL, WE. — F. (F) Berger, Busse, Owens

(change in existing course—eff. spring 16)

124B. History of Western Music: 1600-1750 (3)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 124A or consent of instructor. Historical survey of composers and musical styles from the late 1500s to the mid-18th century. GE credit: ArtHum, Wrt | AH, VL, WE. — W. (W) Berger, Busse, Owens

(change in existing course—eff. spring 16)

126. American Music (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 10 or course 3A or consent of instructor. Survey of American music, including Native American music, Hispanic polyphony, New England psalmody, and selected 20th-century composers and styles. Offered in alternate years. GE credit: ArtHum, Div | ACGH, AH, DD, WE. — S. (S.) Hess, Levy

(change in existing course—eff. spring 16)

129A. Musics of the Americas (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 10 or course 3A or consent of instructor. Survey of music cultures from North, Central, and South America, including the Caribbean, with emphasis on the role of music in society and on the elements of music (instruments, theory, genres and form, etc.). Introduction to ethnomusicological theory, methods, approaches. Offered in alternate years. GE credit: ArtHum, Div | Wrt | AH, DD, VL, WC, WE.

(change in existing course—eff. spring 16)

129B. Musics of Africa, Middle East, Indian Subcontinent (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 10 or course 11 or course 3A or consent of instructor. Survey of music cultures from North, Central, and South America, including the Caribbean, with emphasis on the role of music in society and on the elements of music (instruments, theory, genres and form, etc.). Introduction to ethnomusicological theory, methods, approaches. Offered irregularly. GE credit: ArtHum, Div | Wrt | AH, VL, WC, WE.

(change in existing course—eff. spring 16)

129C. Musics of East and Southeast Asia (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 10 or course 11 or course 3A or consent of instructor. Survey of music cultures from Japan, China, Korea, Vietnam, and Indonesia, with special emphasis on the role of music in society and on the elements of music (instruments, theory, genres and form, etc.). Introduction to ethnomusicological theory, methods, approaches. Offered irregularly. GE credit: ArtHum, Div | Wrt | AH, VL, WC, WE.

(change in existing course—eff. spring 16)

129D. Folk Musics of Europe (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 10 or course 11 or course 3A or consent of instructor. Survey of folk musics from all of Europe, with emphasis on the role of music in society and on the elements of music (instruments, genres and form, etc.). Introduction to ethnomusicological theory, methods, approaches. Offered irregularly. GE credit: ArtHum, Wrt | AH, VL, WC, WE.

(change in existing course—eff. spring 16)

130A. Applied Study of Music: Advanced: Voice (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Voice. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

130B. Applied Study of Music: Advanced: Piano (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Piano. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

130C. Applied Study of Music: Advanced: Harpsichord (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Harpsichord. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

130D. Applied Study of Music: Advanced: Organ (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Organ. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

130E. Applied Study of Music: Advanced: Violin (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Violin. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

130F. Applied Study of Music: Advanced: Cello (1)
Performance instruction—1 hour. Prerequisite: consent of instructor; admission by audition. Class instruction, arranged by section; Cello. Offered as demand indicates. May be repeated for credit.— F, W, S. (F, W, S)

(change in existing course—eff. spring 16)

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; DivDom—Domestic Diversity, Wrt—Writing Experience

Fall 2011 and on Revised General Education (GE): AH—Arts and Humanities; SE—Science and Engineering; SS—Social Sciences

ACGH—American Cultures; DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience

Quarter Offered: F—Fall, W—Winter, S—Spring, Su—Summer; 2015-2016 offering in parentheses

ory, methods, approaches. Offered irregularly. GE credit: ArtHum, Div | Wrt | AH, VL, WC, WE. —Lee, Spiller

(change in existing course—eff. spring 16)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>130H</td>
<td>Applied Study of Music: Advanced; Double Bass (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Double Bass. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130I</td>
<td>Applied Study of Music: Advanced; Flute (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Flute. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130J</td>
<td>Applied Study of Music: Advanced; Oboe (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Oboe. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130K</td>
<td>Applied Study of Music: Advanced; Clarinet (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Clarinet. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130L</td>
<td>Applied Study of Music: Advanced; Bassoon (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Bassoon. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130M</td>
<td>Applied Study of Music: Advanced; French Horn (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; French Horn. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130N</td>
<td>Applied Study of Music: Advanced; Trumpet (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Trumpet. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130O</td>
<td>Applied Study of Music: Advanced; Trombone (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Trombone. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130P</td>
<td>Applied Study of Music: Advanced; Tuba (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Tuba. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130Q</td>
<td>Applied Study of Music: Advanced; Percussion (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Class instruction, arranged by section; Percussion. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130R</td>
<td>Applied Study of Music: Advanced; Classical (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: open to Music majors with ability to perform scales and short compositions from standard repertoire; admission by audition and consent of instructor. Class instruction, arranged by section; Classical. Offered as demand indicates. May be repeated for credit.</td>
</tr>
<tr>
<td>130S</td>
<td>Applied Study of Music: Advanced; Recorder (1)</td>
<td>Performance instruction—1 hour.</td>
<td>Pre-requisite: open to Music majors with ability to perform scales and short compositions from standard repertoire; admission by audition and consent of instructor. Individual instruction in Voice. May be repeated for credit.</td>
</tr>
<tr>
<td>131A</td>
<td>Applied Study of Music: Advanced (Individual); Voice (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: course 1 or the equivalent; open to Music majors only; admission by audition and consent of instructor. Individual instruction in Voice. May be repeated for credit.</td>
</tr>
<tr>
<td>131B</td>
<td>Applied Study of Music: Advanced (Individual); Harpsichord (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Individual instruction in Harpsichord. May be repeated for credit.</td>
</tr>
<tr>
<td>131C</td>
<td>Applied Study of Music: Advanced (Individual); Organ (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Individual instruction in Organ. May be repeated for credit.</td>
</tr>
<tr>
<td>131D</td>
<td>Applied Study of Music: Advanced (Individual); Trombone (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: consent of instructor; admission by audition. Individual instruction in Trombone. May be repeated for credit.</td>
</tr>
<tr>
<td>131E</td>
<td>Applied Study of Music: Advanced (Individual); Viola (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: open to Music majors only; admission by audition and consent of instructor. Individual instruction in Viola. May be repeated for credit.</td>
</tr>
<tr>
<td>131F</td>
<td>Applied Study of Music: Advanced (Individual); Violin (2)</td>
<td>Performance instruction—0.5 hour; independent practice—5 hours.</td>
<td>Pre-requisite: open to Music majors only; admission by audition and consent of instructor. Individual instruction in Violin. May be repeated for credit.</td>
</tr>
</tbody>
</table>
131P. Applied Study of Music: Advanced (Individual); Tuba (2)
Performance instruction—0.5 hour; independent practice—5 hours. Prerequisite: consent of instructor; admission by audition. Individual instruction in Tuba. May be repeated for credit.—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

131Q. Applied Study of Music: Advanced (Individual); Percussion (2)
Performance instruction—0.5 hour; independent practice—5 hours. Prerequisite: consent of instructor; admission by audition. Individual instruction in Percussion. May be repeated for credit.—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

131R. Applied Study of Music: Advanced (Individual); Classical Guitar (2)
Performance instruction—0.5 hour; independent practice—5 hours. Prerequisite: consent of instructor; admission by audition. Individual instruction in Classical Guitar. May be repeated for credit.—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

140. University Jazz Band (2)
Rehearsal—4 hours. Prerequisite: consent of instructor; admission by audition. Rehearsal, study, and performance of jazz band music and full variety of jazz band styles, including swing, bebop, and contemporary jazz styles. May be repeated for credit.—F, W, S. (F, W, S) Griffin [change in existing course—eff. spring 16]

141. University Symphony (2)
Rehearsal—4 hours. Prerequisite: consent of instructor; admission by audition. Rehearsal, study, and performance of music from the orchestral literature. May be repeated for credit.—P/NP grading only. GE credit: AH—F, W, S. (F, W, S) Baldini [change in existing course—eff. spring 16]

142. University Chamber Singers (2)
Rehearsal—3 hours. Prerequisite: consent of instructor; admission by audition. Rehearsal and performance of works for small choral group. May be repeated for credit.—P/NP grading only. GE credit: AH—F, W, S. (F, W, S) Thomas [change in existing course—eff. spring 16]

143. University Concert Band (2)
Rehearsal—4 hours. Prerequisite: consent of instructor; admission by audition. Rehearsal and performance of music for band. May be repeated for credit.—P/NP grading only. GE credit: AH—F, W, S. (F, W, S) Nowlen [change in existing course—eff. spring 16]

144. University Chorus (2)
Rehearsal—4 hours. Prerequisite: consent of instructor; admission by audition. Rehearsal and performance of choral music. May be repeated for credit.—P/NP grading only. GE credit: AH—F, W, S. (F, W, S) Thomas [change in existing course—eff. spring 16]

192. Internship in Music (1-4)
Internship—3-12 hours. Prerequisite: consent of instructor and academic advisor or department chairperson; for music majors. Student must submit a written proposal to an appropriate Music Department instructor. Internship outside the university related to music. May be repeated up to eight units of credit. (P/NP grading only) GE credit: AH—F, W, S. Su. (F, W, S) Su. [change in existing course—eff. winter 15]

194HA. Special Study for Honors Students (2-4)
Independent study—6-12 hours. Prerequisite: courses 7C and 123. Open only to students who qualify for the honors program and admission to Music Senior Honors Program. Preparation and presentation of a culminating project, under the supervision of an instructor, in one of the creative or scholarly areas of music. (Deferred grading only, pending completion of sequence.) GE credit: ArtHum | AH—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

194HB. Special Study for Honors Students (2-4)
Independent study—6-12 hours. Prerequisite: completion of course 194HA; consent of instructor. Open only to students who qualify for honors program and admission to Music Senior Honors Program. Preparation and presentation of a culminating project, under the supervision of an instructor, in one of the creative or scholarly areas of music. (Deferred grading only, pending completion of sequence.) GE credit: ArtHum | AH—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

195. Senior Project (2)
Project—6 hours. Prerequisite: consent of instructor; undergraduate advisor. Restricted to music majors with senior standing. Preparation of a senior project in music composition (public presentation of a new work), in music performance (a public recital), or in music history and theory (public presentation of research results). GE credit: ArtHum | AH—F, W, S. (F, W, S) [change in existing course—eff. winter 15]

198. Directed Group Study (1-5)
Prerequisite: consent of instructor. (P/NP grading only) GE credit: AH—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

199. Special Study for Advanced Undergraduates (1-5)
(P/NP grading only) GE credit: AH—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

Graduate

202. Notation (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Study of musical notation, investigation of techniques for editing Medieval and Renaissance music. Offered in alternate years.—F, W, S. (F, W, S) Berger [change in existing course—eff. spring 16]

203. Music Composition (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Technical projects that explore compositional problems, the skill and techniques with which to solve them, and free composition. May be repeated for credit.—F, W, S. (F, W, S) Bauer, Nicholas, Ortiz, Pelo, Rohde, San Martin [change in existing course—eff. spring 16]

207. Advanced Electronic and Computer Music (4)
Seminar—2 hours. Prerequisite: consent of instructor. Advanced composition of computer and electronic music.—F (F) Pela [change in existing course—eff. spring 16]

210A. Proseminar in Music (Theory and Analysis) (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Voice-leading analysis of tonal music derived from Schenker and pitchclass set theory. Recent work on compositional design, generalizations of the concept of interval, psychologically oriented music theory, and theories of duration structure and timbre.—W. (W) [change in existing course—eff. spring 16]

210B. Proseminar in Music (Ethnomusicology and Criticism) (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Issues and concepts of music history, including performance practice questions for specific repertories and periods; principles, aims and methods of archival study; historical theory; evolution of musical styles; philosophical debates about goals and aims of the discipline in general.—S. (S) [change in existing course—eff. spring 16]

210C. Proseminar in Music (Ethnomusicology) (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Introduction to ethnomusicology through its intellectual history, theoretical approaches, analytical techniques, and methodologies.—F (F) [change in existing course—eff. spring 16]

214. Recent Issues in Ethnomusicology (4)
Seminar—3 hours; term paper. Open to graduate students in music; advanced undergraduates with consent of instructor. Issues, schools of thought, and basic literature in ethnomusicology from the 1980s to present. Emphasis on theory and methodology. Offered in alternate years. [change in existing course—eff. spring 16]

221. Topics in Music History (4)
Seminar—3 hours. Open to graduate students in music; advanced undergraduates with consent of instructor. Studies in selected areas of music history and theory. May be repeated for credit.—F, W, S. (F, W, S) [change in existing course—eff. spring 16]

222. Techniques of Analysis (4)
Seminar—3 hours. Open to graduate students in music; advanced undergraduates with consent of instructor. Analysis and analytical techniques as applied to music of all historical style periods. May be repeated for credit.—F, S. (F, S) [change in existing course—eff. spring 16]

Native American Studies

New and changed courses in Native American Studies (NAS)

Lower Division

34. Native American Art Studio (4)
Lecture—2 hours; studio—6 hours. Limited enrollment. Studio projects to be influenced by contemporary and traditional Native American arts. Examples of designs and media presented in lectures will be of indigenous origin. Introduction and familiarized with various materials and techniques. GE credit: ArtHum | ACGH, AH, DD, OL, VL, WC—Tsinhnahjinnie [change in existing course—eff. winter 16]
46. Orientation to Research in Native American Studies (4)
Lecture/discussion—3 hours; term paper. Prerequisite: Native American Studies major or minor, or consent of instructor. Limited enrollment. Introduces students to basic research resources pertinent to Native American subjects available in the region, including libraries, archives, museums, etc. Emphasis is upon learning to use documentary resources or other collections of data. Students will carry out individual projects. GE credit: SocSci, Div, Wrt | ACGH, DD, SS, WE | S (S.) Cru
(change in existing course—eff. winter 15)

Upper Division

108. Indigenous Languages of California (4)
Lecture/discussion—3 hours; term paper. Survey of the indigenous languages of the California region: linguistic prehistory, languages at first European contact, subsequent language loss, current efforts at language and cultural revitalization, indigenous languages of recent immigrants to California. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, WE | W (W.) Spence
(change in existing course—eff. spring 16)

110A. Quechua Language and Society, Beginning Level 1 (4)
Lecture/discussion—4 hours. Not open to students who took course 107 in the Fall quarter of 2007. Introduction to Quechua language and society emphasizing the practical use of the language. Provides the student with some basic Quechua communicative skills and with an initial knowledge about contemporary Andean society and the status of Quechua language today. GE credit: SocSci | SS—Menard
(change in existing course—eff. winter 15)

118. Native American Politics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing or consent of instructor. Examination of the various interest groups and movements found among Native people and how they relate to the determination of Indian affairs. Study of political action available to Native groups, and local communities, along with relevant theory relating to underdevelopment. Offered in alternate years. GE credit: SocSci | ACGH, DD, SS, WC, WE | W (W.) Crum
(change in existing course—eff. spring 16)

121. Corporate Colonialism (4)
Lecture/discussion—4 hours. Prerequisite: course 1, 10 or 12 encouraged, but not required. Price of progress and modernity for native and non-native people. History of the corporation and neoliberalism, military and intelligence agencies, debt, Taylorism, education institutions, media, and law. Discussion of alternatives advocated by contemporary and indigenous social movements. GE credit: SocSci | ACGH, DD, SS, WC, WE | W (W.) Grandia
(new course—eff. fall 15)

130A. Native American Ethno-Historical Development (4)
Lecture—4 hours. Prerequisite: upper division standing or consent of instructor. Study of Native American ethno-history in North America before 1777s. GE credit: SocSci, Div, Wrt | ACGH, DD, SS, WC, WE | F (F.) Cru
(change in existing course—eff. spring 16)

130B. Native American Ethno-Historical Development (4)
Lecture/discussion—4 hours. Prerequisite: upper division standing or consent of instructor. Study of Native American ethno-history in North America, 1770-1890. GE credit: SocSci, Div, Wrt | ACGH, DD, SS, WE | W (W.) Cru
(change in existing course—eff. spring 16)

130C. Native American Ethno-Historical Development (4)
Lecture/discussion—4 hours. Prerequisite: upper division standing or consent of instructor. Study of Native American ethno-history in North America after 1890. GE credit: SocSci, Div, Wrt | ACGH, DD, SS, WE | S (S.) Cru
(change in existing course—eff. spring 16)

134. Race, Culture, and Nation (4)
Lecture—4 hours. Prerequisite: upper division standing or consent of instructor. Exploration of complexities of Native American racial, cultural and national identities and alliances. Study of tribal and federal citizenship, mixed descent and diasporic people(s), claims to resources, ethnic fraud and contemporary movements of cultural resurgence and political sovereignty and self-determination. Offered in alternate years. GE credit: SocSci | ACGH, DD, SS, WE | W (W.) Perea
(change in existing course—eff. spring 16)

135. Gender Construction in Native Societies (4)
Lecture—4 hours. Religious and philosophical traditions of Native American/indigenous peoples of the Americas. Offered in alternate years. GE credit: ArtHum or SocSci | AH or SS, DD, OL, WE | Perea
(change in existing course—eff. spring 16)

157. Native American Religion and Philosophy (4)
Lecture/discussion—4 hours. Religious and philosophical traditions of Native American/indigenous peoples of the Americas. Offered in alternate years. GE credit: ArtHum, Div | AH, OL, WE | Hernández-Avila
(change in existing course—eff. fall 16)

180. Native American Women (4)
Lecture/discussion—4 hours. Prerequisite: course 1, 10, or Women’s Studies 50. Native American women’s life experiences, cross-cultural comparisons of gender roles, and Native women’s contemporary feminist thought. Utilizes texts from literature, social science, and autobiography/biography. GE credit: ArtHum or SocSci | AH or SS, DD, OL, WE | W (W.)
(change in existing course—eff. fall 16)

181C. Contemporary Native American Poetry (4)
Lecture—4 hours. Works of poetry by contemporary Native American/indigenous poets, with some attention to traditional cultural poetic expressions. GE credit: ArtHum, Div, Wrt | AH, DD, OL, WE | F, W, S (F, W, S.) Hernández-Avila
(change in existing course—eff. fall 16)

192. Internship (1-12)
Internship—1 hour. Prerequisite: enrollment dependent on availability of intern position in Native American Studies or the CN Gorman Museum, with priority to Native American Studies minors/majors; consent of instructor. Restricted to upper division standing. Supervised internship in the CN Gorman Museum, community, and institutional settings related to Native American concerns. May be repeated up to 12 units for credit including 192 and other internships taken in other departments and institutions (P/NP grading only). GE credit: ArtHum | AH | F, W, S, Su | F, W, S, Su | Tsinhnah-Jinnie
(change in existing course—eff. winter 15)

194HA. Special Studies for Honors Students (4)
Independent study—12 hours. Prerequisite: senior qualifying for honors. Directed reading, research and writing culminating in the completion of a senior honors thesis or project under direction of faculty adviser. (Deferred grading only, pending completion of sequence.)-F W, F W
(change in existing course—eff. summer 15)

194HB. Special Studies for Honors Students (4)
Independent study—12 hours. Prerequisite: senior qualifying for honors. Directed reading, research and writing culminating in the completion of a senior honors thesis or project under direction of faculty adviser. (Deferred grading only, pending completion of sequence.)—F W, F W
(change in existing course—eff. summer 15)

Graduate

220. Colonialism, Neoliberalism, and Indigenous Self-Determination (4)
Seminar—3 hours; term paper. Prerequisite: graduate standing. History, political economy and legalities of imperial/colonial systems. Continuities and discontinuities with corporate globalization and neoliberalism. Focus on resistance and self-determination of indigenous peoples, but with comparison to other groups. Offered in alternate years.—Grandia
(change in existing course—eff. winter 16)

246. Native American/Indigenous Research Methodologies (4)
Seminar—3 hours; term paper. Introduction to advanced methodologies currently influencing research in Native American Studies and amongst Indigenous communities. Students will develop an original project and course assignments will guide them through the process of research design and implementation. Offered in alternate years.—W (W.) Perea
(new course—eff. fall 15)

Nematology

New and changed courses in Nematology (NEM)

Lower Division

10V. General Biology (4)
Web virtual lecture—3 hours; web electronic discussion—1 hour. Concepts and issues in biology. Emphasis on composition and structure of organisms; regulation and signaling; heredity, evolution and the interaction and interdependence among life forms and their environment. Significant writing is required. Designed for students not specializing in biology. Not open for credit to students who have completed course Biological Sciences 1A, 1B, 1C, 2A, 2B, 2C, 10 or 10V. GE credit: SciEng, Wrt | SE, SL, WE | S. (S.) Westerdahl
(change in existing course—eff. fall 15)

Upper Division

150. Revising Scientific Prose (4)
Lecture/discussion—3 hours; term paper. Prerequisite: one course in English composition; understanding of English grammar and parts of speech; upper division standing in a science major; consent of the instructor. Class size limited to 15 students. Principals of detailed revision; close analysis of writing styles in research papers, popular scientific articles, and other scientific reports; use of verb-based and noun-based writing styles. GE credit: Wrt | W (W.) Jaffe
(change in existing course—eff. winter 15)
Neurobiology, Physiology, and Behavior (NBP)

New and changed courses in Neurobiology, Physiology, and Behavior (NBP)

Lower Division

10. Elementary Human Physiology (3)
Lecture—3 hours. Introduction to physiology for non-scientists. Basic cell physiology and survey of major organ systems and how they function in homeostasis and human health. Not open for credit to students who have completed course 101. GE credit: SciEng | SE. F, S. (F, S) Gomes, Hahn
(new course—eff. winter 16)

17. The Path to Cyborgs: Introduction to Prosthetics and Human Machine Interfaces (3)
Lecture—3 hours. Interface of biology and technology. Mind-controlled prosthetic limbs, artificial organs, and implantable devices. Emphasis on basic physiological functions and how they can be replaced by devices. Suitable for majors and non-majors. GE credit: SciEng | SE. F. (W) Sutter
(new course—eff. winter 16)

90A. Lower Division Seminar: Issues in Body Weight Regulation (2)
Seminar—2 hours. Prerequisite: lower division standing, consent of instructor. Limited enrollment. Critical examination of issues in body weight regulation through shared readings, discussions, written assignments, debates and oral presentations. —C. Warden
(change in existing course—eff. winter 15)

90B. Human Color Perception (2)
Seminar—2 hours, term paper. Prerequisite: lower division standing. Critical review of the evidence and arguments for the human brain. —W. Werner
(change in existing course—eff. winter 15)

90C. Current Issues in Animal Behavior (2)
Seminar—2 hours. Prerequisite: lower division standing. Limited enrollment. The mechanisms and outcomes of sexual selection (mate choice and mate competition). Theory, current models and evidence that supports or refutes the models. —W. (W) Hedrick
(change in existing course—eff. winter 15)

91C. Research Conference (1)
Discussion—1 hour. Prerequisite: lower division standing in Neurobiology, Physiology and Behavior or related biological science and consent of instructor, concurrent enrollment in course 99. Restricted to lower division students. Research findings and methods in neurobiology, physiology, and/or behavior. Presentation and discussion of research by faculty and students. (P/NP grading only)—F, W, S. (F, W, S)
(change in existing course—eff. winter 15)

Upper Division

110A. Foundations 1: From Molecules to Individuals (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: Biological Sciences 2A, 2B and 2C, Chemistry 2A and 2B, Physics 7A and 7B, and 7C at least concurrent. Pass One restricted to majors in Neurobiology, Physiology and Behavior. Major concepts in cell biology with special emphasis on connections between cell biology and behavior. Includes: cellular metabolism, cellular sensing and signaling, membrane structure-function, molecular switches, electrical and chemical signaling, endocrinology, and differentiation, cytoskeleton, and integrative examples. Credit limited to 3 units for students who have taken Biological Sciences 104. GE credit: SciEng | SE. F, S. (F, S) Gomes, Hahn
(new course—eff. spring 16)

110B. Foundations 2: Neurobiology (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: Physics 7C and course 110A completed with a grade of C- or above. Open to declared NPB majors only. Core concepts of neurobiology including single-neuron biophysics, synapses and transmitters, neuronal development, motor systems, central pattern generation, neuronal circuits, intracellular signal transduction, sensory processing, multisensory integration, autonomic nervous system, neuromodulation, learning and memory, and higher cognition and disease. Credit limited to 2 units for students who have taken course 100. GE credit: SciEng | SE. F, S. (F, S) Britten, Sutter
(new course—eff. fall 16)

110C. Foundations 3: Physiology (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 110B completed with a grade of C- or above. Open to declared NPB majors only. Focuses on the structure, function, and interactions of animal organ systems in health and reproduction, and the response to perturbations of homeostasis; neuro and endocrine signaling; skeletal muscle and movement; cardiovascular and respiratory systems; renal, digestive, immune, and reproductive physiology. Credit limited to 2 units for students who have taken course 101. GE credit: SciEng | SE. W, S. (W, S) Furlow, Ussery
(new course—eff. winter 17)

122. Developmental Endocrinology (3)
Lecture—3 hours. Prerequisite: course 101. Restricted to upper division students. Hormonal control of development, maturation and senescence from the cellular to organismal level, with emphasis on the human. Prenatal and neonatal life, childhood and adolescence, adulthood and pregnancy, as well as the endocrinology of aging. Offered irregularly.
(change in existing course—eff. winter 15)

142. Environmental Endocrinology: Mechanisms for Life Cycles (3)
(new course—eff. winter 15)

194HA. Neurobiology, Physiology, and Behavior–Honors (1)
Laboratory—3-12 hours. Prerequisite: senior standing; minimum 3.500 GPA in courses counted toward major; approval by the Master Adviser. Honors project in Neurobiology, Physiology, and Behavior. Laboratory research on a specific question. The project is developed with the sponsoring faculty member and approved by the student's Honors Thesis Committee. Honors thesis to be submitted upon completion of the project. (P/NP grading only)—F, W, S. (F, W, S)
(change in existing course—eff. summer 15)

194HB. Neurobiology, Physiology, and Behavior–Honors (1-4)
Laboratory—12 hours. Prerequisite: senior standing; minimum 3.500 GPA in courses counted toward major; approval by the Master Adviser. Honors project in Neurobiology, Physiology, and Behavior. Laboratory research on a specific question. The project is conducted with the sponsoring faculty member and approved by the student's Honors Thesis Committee. Honors thesis to be submitted upon completion of the project. (P/NP grading only)—F, W, S. (F, W, S)
(change in existing course—eff. summer 15)

194HC. Neurobiology, Physiology, and Behavior–Honors (2)
Laboratory—3-12 hours. Prerequisite: senior standing; minimum 3.000 GPA in courses counted toward major; approval by the Master Adviser. Honors project in Neurobiology, Physiology, and Behavior. Laboratory research on a specific question. The project is developed with the sponsoring faculty member and approved by the student's Honors Thesis Committee. Honors thesis to be submitted upon completion of the project. (P/NP grading only)—F, W, S. (F, W, S)
(change in existing course—eff. summer 15)

Graduate

211. Advanced Topics in Neuroimaging (2)
Seminar—2 hours. Prerequisite: Psychology 210 or consent of instructor. Restricted to 16 students. Critical presentation and discussion of the most influential advanced issues in neuroimaging, emphasizing fMRI design/analysis and the integration of fMRI with EEG/MEG. (Same course as Neuroscience 211 and Psychology 211.) May be repeated for credit. (S/U grading only)—W. (W) Miller
(new course—eff. spring 15)

221. Cellular Neurosciences (4)
Laboratory—3 hours; discussion—1.5 hours. Advanced course on cellular and subcellular organization of the nervous system. Membrane channels, sensory transduction, synaptic transmission and cellular aspects of development and learning. —F. (F) Burns, McAllister, Trimmer, Zito
(new course—eff. winter 15)

270. How to Write a Fundable Grant Proposal in the Biomedical Sciences (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. Restricted to members of the Neuroscience and BMCDB graduate groups; graduate students in other biomedical programs may enroll with instructor permission. Teaches the do’s and don’ts of writing grants in the biomedical sciences and the mechanisms of the review process. Offered in alternate years. May be repeated for credit. (Same course as Neuroscience 270.)—S. Burns
(new course—eff. spring 16)

Neuroscience

New and changed courses in Neuroscience (NSC)

Graduate

220. How to Give a Scientific Seminar (3)
Lecture/discussion—3 hours. Prerequisite: consent of instructor. Presentation of effective seminars: Scientific presentation and analysis and the integration of fMRI with EEG/MEG. (Same course as Neuroscience 211 and Psychology 211.) May be repeated for credit. (S/U grading only)—W. (W) Miller
(change in existing course—eff. winter 15)

250. Biology of Neuroglia (2)
Laboratory—discussion—1.5 hours. Prerequisite: consent of instructor. Properties and functions of non-neuronal or neuronal cells in the mammalian central nervous system with relevance to neuronal development, physiology and injury response. Offered in alternate years. —W. (W) S. DeBellis, McAllister
(change in existing course—eff. winter 15)
Nursing, School of

New and changed courses in Nursing (NRS)

Graduate

205A. Overview of Research in Nursing Science and Health Care (2)
Lecture—discussion—2 hours. Prerequisite: consent of instructor. To open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Provides an overview of qualitative and quantitative paradigms in scientific inquiry and the major designs related to each paradigm. First of a three-course series on research design and methods in nursing science and healthcare research. —F, W, S, Su.
(new course—eff. fall 15)

205B. Quantitative Research in Nursing Science and Health Care (4)
Lecture—4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Introduces principles of quantitative data collection and analysis as applied to major study designs in nursing and health-care research. Provides a basic foundation for producing, interpreting, and applying quantitative research findings to answer clinical, system, and policy questions. —W, W, S, Su.
(new course—eff. fall 15)

205C. Qualitative Research in Nursing Science and Health Care (4)
Lecture—4 hours. Prerequisite: consent of instructor. Restricted to current Ph.D. students in NSHL program or consent of instructor. Introduces principles of qualitative data collection and analysis as applied to major study designs in nursing and health-care research. Provides a basic foundation for producing, interpreting, and applying qualitative research findings to answer clinical, system, and policy questions. —S, S.
(new course—eff. fall 15)

210Y. Applied Health Informatics (4)
Lecture/discussion—1 hour; web virtual lecture—3 hours. Prerequisite: consent of instructor. Open to current student in NSHL graduate programs or consent of instructor. Within the conceptual framework of the Foundation of Knowledge model, this course integrates nursing science, information science, com- puter science and cognitive science to acquire, process, generate, and disseminate knowledge. —F, W, W, W.
(change in existing course—eff. winter 15)

211Y. Rural Health (2-3)
Lecture/discussion—2 hours; fieldwork. Prerequisite: consent of instructor. To open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Introduces students to rural health care system organization, domains of practice, and clinical facilitation. —F, W, S, Su.
(new course—eff. spring 16)

242A. Implementation Science for Clinicians (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course focuses on implementation of relevant research or improvement questions specific to patient care and evaluating the pertinent research literature related to the implementation of evidence-based care. The course is the 1st of a 3-course series. —F, W, W, Su.
(change in existing course—eff. winter 15)

242B. Implementation Science for Clinicians (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course is a continuation of course 242A, Implementation Science for Clinicians, with a focus on implementation and evaluating a change. —F, W, S, Su.
(new course—eff. spring 15)

242C. Implementation Science for Clinicians (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. Advanced skills in implementation science into systems based practice and incorporating quality improvement strategies. Emphasis on dissemination and knowledge with particular focus on prevention of medical errors. —F, W, S, Su.
(change in existing course—eff. winter 15)

243A. Leadership in Professional Practice (1)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. To open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course is a critical examination of leadership using theoretical and philosophical perspectives with an applied approach applicable to clinical practice. The 3 course series is conducted across three quarters in the 1st, 3rd and 8th quarters. —F, W, W, Su.
(change in existing course—eff. winter 15)

243B. Leadership in Professional Practice (1)
Lecture/discussion—1 hour. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces professional role topics including history, the role in interprofessional teams and the health care system, transitioning to the role from other health professions, scope of practice, certification and licensure and professional organizations. —F, W, W, Su.
(new course—eff. winter 15)

245C. Leadership in Professional Practice (1)
Lecture/discussion—1 hour. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces professional role topics including history, the role in interprofessional teams and the health care system, transitioning to the role from other health professions, scope of practice, certification and licensure and professional organizations. —F, W, W, Su.
(new course—eff. winter 15)

251A. Primary Health Care (8)
Lecture/discussion—8 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces primary health care concepts essential to the care of common medical problems seen in primary care settings. —F, W, S, Su.
(change in existing course—eff. winter 15)

251B. Foundations of Primary Health Care (8)
Lecture/discussion—8 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces primary health care concepts essential to the care of common medical problems seen in primary care settings. —F, W, S, Su.
(new course—eff. spring 15)

251C. Primary Health Care (6)
Lecture/discussion—6 hours. Prerequisite: consent of instructor. To open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course is a continuation of course 251B, Foundations of Primary Health Care, with a focus on advanced concepts and evaluating a change. —F, W, S, Su.
(new course—eff. winter 15)

251D. Primary Health Care (6)
Lecture/discussion—6 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces primary health care concepts essential to the care of common medical problems seen in primary care settings. —F, W, S, Su.
(change in existing course—eff. winter 15)

260. Foundations of Behavioral Health (1)
Lecture/discussion—1 hour. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course focuses on the spectrum of normal psychological development over the lifespan for children, adults and elders. Theories of stress and coping mechanisms are presented as a framework for the assessment of individuals. —F, W, W, Su.
(new course—eff. winter 15)
270. Foundations of Pharmacology (2)
Lecture/discussion—1 hour; laboratory—3 hours.
Prerequisite: Consent. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Course introduces the student to the major concepts in pharmacology and relevant human physiology related to pharmacotherapeutics and toxicology. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

271A. Pharmacology (2)
Lecture/discussion—1 hour; laboratory—3 hours.
Prerequisite: Consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Systems based pharmacology focused on classes of drugs used to treat disorders in specialty systems. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

271B. Pharmacology (2)
Lecture/discussion—1 hour; laboratory—3 hours.
Prerequisite: Consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Systems based pharmacology focused on classes of drugs used to treat disorders in specialty systems. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

290. Master's Seminar (2)
Discussion—2 hours. Prerequisite: current enrollment in the Nursing Science and Health-Care Leadership graduate program or consent of instructor. Open to NSHLM students only or by consent of course instructor. Subject varies from quarter to quarter. Current knowledge and issues relevant to one of two fields of emphasis: population health or health systems. May be repeated 10 times for credit. —F, W, S. (F, W, S)
[change in existing course—eff. winter 15]

Professional

301. Learner Centered Teaching (3-4)
Lecture/discussion—3 hours; practice—1 hour. Open to current students in the Nursing Science and Health-Care Leadership graduate programs; outside students with prior educational or work experience in education may register for this class with the consent of instructor. Students will explore best practices in learner-centered teaching, performance-based curriculum models, instructional design, and assessing/evaluating student learning. Students will have experience in planning learner-centered activities that are engaging and effective in achieving desired student performance. —S. (S)
[change in existing course—eff. spring 16]

302. Teaching Methods—Use of Emerging Technologies to Improve Student Learning (4)
Lecture/discussion—3 hours; practice—1 hour. Open to current students in the Nursing Science and Health-Care Leadership graduate programs; outside students with prior educational or work experience in education may register for this class with the consent of instructor. Students will examine, design and develop instructional strategies that use innovative and emerging technologies to promote motivation, performance and learning in health professions education. Research findings associated with use of various emerging technologies will be examined. —F. (F)
[change in existing course—eff. fall 16]

303. Professional Role Formation (2-4)
Lecture/discussion—2 hours; Laboratory—2 hours. Exploration of the educator role. Open to current students in the Nursing Science and Health-Care Leadership graduate programs; outside students with prior educational or work experience in education may register for this class with the consent of instructor. Exploration of the educator role. Topics include Role Expectations, Legal and Regulatory Issues, Professional Ethics, Educational Scholarship, Individual Differences, Learning Environments, and Lifelong Learning. Placements for the optional practicum are arranged in a wide variety of settings. —W. (W)
[change in existing course—eff. winter 17]

Professional

400. Basic Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Instruction and practice of the fundamental clinical skills necessary for patient care comprise this course with a primary focus on the principles of effective communication in establishing the therapeutic provider-patient relationship. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

401. Basic Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410A. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410B. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410C. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410D. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410E. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410F. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[change in existing course—eff. winter 15]

410G. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Degree programs or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/spcialized content. —F, W, S, Su. (F, W, S, Su.)
[new course—eff. fall 15]

420. Foundations of Clinical Nursing Practice (3)
Clinical activity—9 hours. Prerequisite: consent of the instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Group or by consent of the instructor. Foundational course introduces students to core concepts of clinical nursing, including clinical reasoning, professional ethics, the specific communication and activities of daily living. Develop skills for the provision of safe, high quality, culturally-sensitive, person-centered care across the lifespan. —Su. (Su.)
[new course—eff. summer 16]

421. Health Assessment Across the Lifespan (3)
Lecture/discussion—1 hour; clinical activity—6 hours. Prerequisite: consent of the instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Group or by consent of the instructor. prepares students to conduct a health history assessment and culturally appropriate approaches for individuals across the lifespan. Acquire the knowledge, understanding, and skills needed to perform, interpret and communicate a health history. —Su. (Su.)
[new course—eff. summer 16]

422. Care of Adults with Chronic Conditions (4)
Lecture/discussion—3 hours; clinical activity—9 hours. Prerequisite: courses 221, 272, 420, and 421; consent of the instructor. Open to graduate students in the Nursing Science and Health-Care Leadership Graduate Group or by consent of the instructor. Learn concepts central to the effective management of a variety of common chronic illness and disabling conditions across the lifespan in a variety of different settings. Practice conducting in-depth health assessments of individuals with chronic conditions. —F. (F)
[new course—eff. fall 16]
423. Psychosocial Wellness & Illness (5)
Lecture/discussion—3 hours; clinical activity—6 hours. Prerequisite: courses 221, 272, 420, and 421; consent of the instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Examines the biopsychosocial aspects of family on health and illness, reproductive health, child-rearing, and the health and illness in children and youth. —W. (W.) (new course—eff. fall 16)

424. Nursing Care of Older Adults (3)
Lecture/discussion—2 hours; clinical activity—3 hours. Prerequisite: courses 221, 272, 420, 421, 273, 422, 423, 425, 223, and 426; consent of the instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Build skills for situations involving older adults, such as in the management of chronic diseases, psychosocial, psychological, cultural, societal, and environmental factors that affect psychological wellness and illness. Practice providing care to individuals and families experiencing disruptions in mental health secondary to physical or psychiatric illness, trauma or loss. —F. (F.) (new course—eff. fall 16)

425. Family Focused Nursing (9)
Lecture/discussion—5 hours; clinical activity—12 hours. Prerequisite: courses 221, 272, 420, 421, 273, 422, and 423; consent of the instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Open to graduate students with a unit in the course of sequential courses in the field of nursing and interpersonal care. Includes influences of family on health and illness, reproductive and gender/sexuality issues, pregnancy, birth and child rearing, and the health and illness in children and youth. —W. (W.) (new course—eff. winter 17)

426. Nursing Care of Adults with Complex Illness (8)
Lecture/discussion—4 hours; clinical activity—12 hours. Prerequisite: courses 221, 272, 420, 421, 273, 422, 423, and 425; consent of the instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Prepare students to provide comprehensive, patient-centered nursing care for patients with complex illness and injury. Theory portion focuses on concepts associated with complex physiological alterations. —S. (S.) (new course—eff. spring 17)

427. Fostering Healthy Communities (7)
Lecture/discussion—4 hours; clinical activity—9 hours. Prerequisite: consent of the instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group by consent of the instructor. Focuses on populations and communities, and emphasizes working with diverse communities in providing health promotion, chronic disease management, transitional support and crisis intervention. Develop skills to critically analyze and shape health policy and develop accessible community resources. —S. (S.) (new course—eff. summer 17)

428. Capstone Clinical Nursing Practicum (8)
Clinical activity—24 hours. Prerequisite: courses 220, 221, 222A, 272, 420, 421, 429A, 222B, 273, 422, 423, 429B, 203, 212, 425, 429C, 202, 223, 426, 429D, 224, 427, and 426C; consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Practice experiences designed to facilitate transition to professional practice. Opportunity to choose a clinical practice area of interest and to work with a preceptor with expertise in that area. —F. (F.) (new course—eff. fall 17)

429A. Collaborative Practice A (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —S. (S.) (new course—eff. summer 16)

429B. Collaborative Practice B (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —F. (F.) (new course—eff. summer 16)

429C. Collaborative Practice C (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —W. (W.) (new course—eff. summer 16)

429D. Collaborative Practice D (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —S. (S.) (new course—eff. summer 16)

429E. Collaborative Practice E (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —F. (F.) (new course—eff. summer 17)

429F. Collaborative Practice F (1)
Clinical activity—3 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Group or by consent of the instructor. Interprofessional course uses experiential learning activities including simulation, role play, and case studies. Concepts include but are not limited to: communication, person-centered care, ethical decision making, end-of-life decisions, culturally appropriate care, quality and safety, social justice, and professionalism. —F. (F.) (new course—eff. fall 17)

440. Preparation for Clinical Practice (1-3)
Clinical activity—3-9 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Students are placed in clinical settings and/or clinical simulation laboratories to observe and practice the integration of clinical skills with direct supervision by faculty. —S. (S.) (change in existing course—eff. winter 16)

450A. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements. May be repeated five times for credit. —F. W. S. Su. (F. W. S. Su.) (change in existing course—eff. winter 16)

450B. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements. May be repeated five times for credit. —F. W. S. Su. (F. W. S. Su.) (change in existing course—eff. winter 16)

450C. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements. May be repeated five times for credit. —F. W. S. Su. (F. W. S. Su.) (change in existing course—eff. winter 16)

450D. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements. May be repeated five times for credit. —F. W. S. Su. (F. W. S. Su.) (change in existing course—eff. winter 16)

450E. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Prerequisite: consent of instructor. Open to graduate students in the Nursing Science and Health Care Leadership Graduate Degree programs or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements. May be repeated five times for credit. —F. W. S. Su. (F. W. S. Su.) (change in existing course—eff. winter 16)
Nutrition

New and changed courses in Nutrition (NUT)

Upper Division

111A. Introduction to Nutrition and Metabolism (3)

Web virtual lecture—3 hours. Prerequisite: Chemistry 8B, Neurobiology, Physiology, and Behavior 101 or the equivalent. Restricted to upper division or graduate level students only. Introduction to metabolism of protein, fat and carbohydrates, the biological role of vitamins and minerals; nutrient requirements during the life cycle; assessment of dietary intake and nutritional status. Not open for credit to students who have completed course 101. GE credit: SciEng | QE | SE — F. (F.) Stewart

(new course—fall 14)

119B. International Community-Based Nutritional Assessments (3)

Lecture—2 hours; fieldwork—12 hours. Prerequisite: course 119A and consent of instructor. Restricted to upper division students in Clinical Nutrition, Community Nutrition, Dietetics, and Nutrition Science. A six-week summer course in Peru. Implementation of a community-based nutritional assessment survey, including development of the survey instrument, selection of the study sample, collection and verification of data, and analysis and interpretation of the results; the project will be carried out by paired participation of students and faculty members of UC Davis and the collaborating foreign institution.

(change in existing course—fall 15)

Graduate

202. Advanced Nutritional Energetics (2)

(cancelled course—fall 15)

253. Control of Energy Balance and Body Weight (3)

Lecture—2 hours; discussion—1 hour. Prerequisite: course 210A or 210B or consent of instructor. Comprehensive study of the biochemical, nutritional and physiological mechanisms controlling food intake, body composition and energy expenditure. Subject matter will be approached through lectures and discussions where students and staff will critically evaluate the literature. Offered in alternate years. —S. Havel, Ramsey

(change in existing course—spring 16)

261. Lactation and Infant Nutrition (6)

Lecture—5 hours; discussion—1 hour. Prerequisite: course 210A or 210B or consent of instructor. Comprehensive study of the biochemical, nutritional and physiological mechanisms underlying human lactation and nutritional needs of both mother and infant. Development of skills in assessment, nutrition counseling, education and support of new mothers and their families. —W. (W.) Heiring

(change in existing course—fall 15)

262. Child and Adolescent Nutrition (6)

Lecture—5 hours; discussion—1 hour. Prerequisite: course 261. Restricted to students enrolled in the MAS program; nutrition graduate students by consent of instructor. Relationships among nutrition,
growth, and development during childhood and adolescence. Nutritional assessment for normal and high risk groups, psychological, social, and economic factors contributing to nutritional status. Nutritional needs and interventions for special groups, including obese children/adolescents, athletes, and eating disorders. —S. Heinig

(change in existing course—eff. winter 15)

Lecture—3 hours; term paper. Prerequisite: graduate standing. Restricted to students enrolled in the MAS program; Nutrition graduate students by consent of instructor. Application of epidemiological principles to the study of maternal and child nutrition. Topics include quantitative and qualitative study procedures, including study design, data collection, and related analytical techniques. —F. (F.)

(change in existing course—eff. winter 15)

264A. Current Topics in Maternal and Child Nutrition: Principles of Adult Education (2)
Seminar—2 hours. Prerequisite: graduate standing. Restricted to students enrolled in the MAS program; Nutrition graduate students by consent of instructor. Current scientific literature related to Maternal and Child Nutrition in adult education settings. Topics include methods and theories of adult education and critical thinking skills related to research evaluation. —W. Heinig

(change in existing course—eff. winter 15)

264B. Current Topics in Maternal and Child Nutrition: Epidemiology and Evidence-Based Practice (2)
Seminar—2 hours. Prerequisite: graduate standing. Restricted to students enrolled in the MAS program; Nutrition graduate students by consent of instructor. Current scientific literature related to Maternal and Child Nutrition. Topics include epidemiology, evidence-based practice, breast feeding promotion, and nutritional assessment of populations. —W. Heinig

(change in existing course—eff. winter 15)

264C. Current Topics in Maternal and Child Nutrition: Public Policy Development and Implementation (2)
Seminar—2 hours. Prerequisite: graduate standing. Restricted to students enrolled in the MAS program; Nutrition graduate students by consent of instructor. Current scientific literature related to Maternal and Child Nutrition. Topics include nutrition surveillance and monitoring, as well as public policy development and implementation. —S. Heinig

(change in existing course—eff. winter 15)

270. Scientific Ethics in Biomedical Studies: Emphasis on Nutrition (3)
Lecture—1 hour; discussion—1 hour; term paper. Restricted to graduate standing or consent of instructor. Scientific ethics in biomedical studies, especially nutrition. Discussion and case study presentations on scientific integrity, fraud, misconduct, conflict of interest, human and animal research protections. Not open for credit to students who have completed course 492B. —S. Heinig

(change in existing course—eff. winter 15)

294A. Current Topics in Developmental Nutrition (2)
Seminar—2 hours. Prerequisite: course 114 or 252 or consent of instructor. Restricted to graduate standing or consent of instructor. Effects of nutrition on embryology, morphogenesis, and developmental mechanisms. May be repeated for credit when topic differs. —F. (F.)

(change in existing course—eff. winter 15)

Nutritional Biology
(A Graduate Group)

New and changed courses in Nutritional Biology (NUB)
Graduate
210B. Advanced Nutrition II: Nutrition and Cell Biology, Micronutrients (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: admission to the Nutritional Biology Graduate Group or consent of instructor. Class size limited to 30 students. Effects of nutrients at the cellular level. Principles of cell signaling and signaling modulation by nutrients. Advanced concepts of mineral and vitamin metabolism. Mineral and vitamin deficiencies and associated pathologies. —W. (W.) Haj

(new course—eff. fall 14)

277. Molecular Mechanisms in Cancer and Other Diseases (3)
Lecture/discussion—2 hours; project. Prerequisite: undergraduate or graduate introductory course in cell biology (such as Biological Sciences 104), and general biochemistry (Molecular & Cellular Biology 121 or 122) required; course 202 recommended. Restricted to graduate standing or consent of instructor. Exploration of cutting edge investigations on the underlying mechanisms of cancer biology, cancer therapy and other diseases. Current medical research in Cancer and other diseases, as it spans the bench to bedside. —S. (S.) Goldkorn

(change in existing course—eff. winter 15)

Pharmacology and Toxicology

New and changed courses in Pharmacology and Toxicology (PTX)
Graduate
215. Electrophysiology Techniques and Applications (3)
Lecture—1.5 hours; discussion—1.5 hours. Broad scope of topics in electrophysiology techniques and applications. (Same course as Molecular, Cellular and Integrative Physiology 215.) (S/U grading only)—S. (S.) Chen

(new course—eff. spring 15)

276. Molecular Mechanisms in Cancer and Other Diseases (3)
Lecture/discussion—2 hours; project. Prerequisite: completion of course 7. GE credit: ArtHum | AH, DD.—S. (S.) Heinig

(change in existing course—eff. winter 15)

277. Molecular Mechanisms in Cancer and Other Diseases (3)
Lecture—2 hours; discussion—1 hour; term paper. Prerequisite: course 22 recommended. Seventeenth-century philosophical writings of Spinoza and Leibniz. Topics drawn from both philosophers include: the nature and existence of God, the nature of mind, the relation between mind and body, human freedom, metaphysical monism vs. pluralism. Offered in alternate years. GE credit: ArtHum | AH, WE.—J. Mattey

(change in existing course—eff. summer 15)

170. Spinoza and Leibniz (4)
Lecture/discussion—4 hours. Prerequisite: course 22 recommended. Seventeenth-century philosophical writings of Spinoza and Leibniz. Topics drawn from both philosophers include: the nature and existence of God, the nature of mind, the relation between mind and body, human freedom, metaphysical monism vs. pluralism. Offered in alternate years. GE credit: ArtHum | AH, WE.—J. Mattey

(change in existing course—eff. summer 15)

189A. Special Topics in Philosophy; History of Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in History of Philosophy. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE.—W. (W.) Gilmore

(change in existing course—eff. summer 15)

189B. Special Topics in Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Metaphysics. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE.—W. (W.) Gilmore

(change in existing course—eff. summer 15)
189C. Special Topics in Philosophy; Theory of Knowledge (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Theory of Knowledge. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — S. (F.) Mattey, Molyneux (change in existing course—eff. summer 15)

189D. Special Topics in Philosophy; Ethics (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Ethics. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — Capp, Oshana (change in existing course—eff. summer 15)

189E. Special Topics in Philosophy; Political Philosophy (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Political Philosophy may be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — Oshana (change in existing course—eff. summer 15)

189F. Special Topics in Philosophy; Philosophy of Law (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Philosophy of Law. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — Oshana (change in existing course—eff. summer 15)

189G. Special Topics in Philosophy; Aesthetics (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Aesthetics. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. (change in existing course—eff. summer 15)

189H. Special Topics in Philosophy; Philosophy of Mind (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Philosophy of Mind. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — Molyneux (change in existing course—eff. summer 15)

189I. Special Topics in Philosophy; Philosophy of Science (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Philosophy of Science. May be repeated up to eight units of credit. GE credit: ArtHum | AH, WE. — Griesser, Landry, Millstein (change in existing course—eff. summer 15)

189J. Special Topics in Philosophy; Philosophy of Language (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Philosophy of Language. May be repeated up to eight units of credit. GE credit: ArtHum | AH. — May, Sennet (change in existing course—eff. summer 15)

189K. Special Topics in Philosophy; Logic (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: one course in the area of the special topic. Special topics in Logic. May be repeated up to eight units of credit. GE credit: ArtHum | AH, S. (S.) Antonelli (change in existing course—eff. summer 15)

194HA. Honors Research Project (4)
Tutoring—3 hours; term paper. Prerequisite: consent of instructor. Open to students who are members of the honors program in Philosophy. Completion of honors research project under direction of an instructor. Consult departmental major adviser for list of instructors available in a given quarter. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

194HB. Honors Research Project (4)
Tutoring—3 hours; term paper. Prerequisite: consent of instructor; open to students who are members of the honors program in Philosophy. Completion of honors research project under direction of an instructor. Consult departmental major adviser for list of instructors available in a given quarter. — F, W, S. (F, W, S.) (change in existing course—eff. summer 15)

Graduate

200A. Proseminar I (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Open only to students in their first quarter of the Philosophy Ph.D. program. Intensive study of core works in a selected area of philosophy. Intensive experience in philosophical writing, discussion, and presentation of written work. — F. (F) (change in existing course—eff. winter 15)

200B. Proseminar II (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor. Open only for students in their first quarter of Philosophy Ph.D. program. Intensive study of core works in a selected area of philosophy. Intensive experience in philosophical writing, discussion, and presentation of written work. Limited enrollment. — F. (change in existing course—eff. winter 15)

238. Philosophy of Language Workshop (4)
Seminar—3 hours; extensive writing. Open to graduate students only. Discussion of recently published, unpublished and in-progress research in philosophy of language, including work on the relation of language and mind, of language and logic, and linguistic theory. May be repeated for credit when topic differs. — May (change in existing course—eff. winter 15)

Physical Education

New and changed courses in Physical Education (PHE)

Upper Division

1. Physical Activities (0.5)
Laboratory—2 hours. Physical Education Activities classes offered in the following areas: aquatics, personal fitness, martial arts, individual sports, and team sports. These academic classes are instructional rather than recreational and are intended to improve activity specific skills and knowledge. May be repeated, along with course 6, for a combined total of 6 units. Credit limited to 6 units in combination with course 6. (P/NP grading only.) — F, W, S. (F, W, S.) (change in existing course—eff. winter 15)

6. Preparation and Participation in ICA Competition (1)
Practice—3 hours. Prerequisite: consent of instructor (head coach). Classes offered in all UC Davis intercollegiate athletic sports and are restricted to student-athletes who are members. May be repeated, along with course 1, for a combined total of 6 units. (P/NP grading only.) — F, W, S. (F, W, S.) (change in existing course—eff. winter 15)

29. Basic Scuba (2)
(canceled course—eff. fall 14)

Upper Division

128A. Intermediate Scuba Diving (4)
(canceled course—eff. fall 14)

128B. Research Diving Techniques (4)
(canceled course—eff. fall 14)

Physicians Assistant Studies

New and changed courses in Physicians Assistant Studies (PAS) Graduate

299. Research and Writing (1-4)
Extensive writing or discussion—3-12 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Students in the Nursing Science and Health Care Leadership graduate programs conduct research and writing under the supervision of a faculty member. Students may repeat this course for credit in different quarters, depending on the length of their program of study to complete their Master’s Degree. (S/U grading only.) — F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. winter 15)

Professional

400. Basic Clinical Skills (1-4)
Lecture/lab—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content. — F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. winter 15)

401. Basic Clinical Skills (1-4)
Lecture/lab—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content. — F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. winter 15)

410A. Advanced Clinical Skills (1-4)
Lecture/lab—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content. — F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. winter 15)

410B. Advanced Clinical Skills (1-4)
Lecture/lab—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specialty systems. — F, W, S, Su. (F, W, S, Su.) (change in existing course—eff. winter 15)
9B. Classical Physics (5)
Lecture—3 hours; laboratory—2.5 hours; discussion—1 hour. Prerequisite: course 9A, Mathematics 21C, 21D (may be taken concurrently). Continuation of course 9A. Fluid mechanics, thermodynamics, wave phenomena, optics. Only two units of credit for students who have completed course 7A, not open for credit to students who have completed course 9HB, 9HC, or Engineering 105. GE credit: SciEng | SE = F, W, (F, W)
(change in existing course—eff. winter 15)

410C. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related to specified systems.—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 15)

410D. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related to specified systems.—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 15)

410E. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related to specified systems.—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 15)

410F. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related to specified systems.—F, W, S, Su. (F, W, S, Su.)
(new course—eff. fall 15)

410G. Advanced Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs. Continuation of focus on history taking and physical examination skills with advanced/specialized content related to specified systems.—F, W, S, Su. (F, W, S, Su.)
(new course—eff. fall 15)

440. Preparation for Clinical Practice (1-3)
Clinical activity—36 hours. Prerequisite: consent of instructor. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Students are placed in clinical settings and/or clinical simulation laboratories to observe and practice the integration of clinical skills with direct supervision by faculty.—F, W, S, Su. (F, W, S, Su.)
(new course—eff. spring 14)

Physics

New and changed courses in Physics (PHY)

Lower Division

1A. Principles of Physics (3)
Lecture—3 hours. Prerequisite: trigonometry or consent of instructor. Mechanics. Introduction to general principles and analytical methods used in physics with emphasis on applications in applied agricultural and biological sciences and in physical education. Not open to students who have received credit for course 78 or 9A. GE credit: SciEng | SE = F. (F)
(change in existing course—eff. winter 15)

1B. Principles of Physics (4)
Lecture—3 hours; laboratory—2.5 hours; discussion—1 hour. Prerequisite: course 9A, Mathematics 21C, 21D (may be taken concurrently). Continuation of course 9A. Fluid mechanics, thermodynamics, wave phenomena, optics. Only two units of credit for students who have completed course 7A, not open for credit to students who have completed course 9HB, 9HC, or Engineering 105. GE credit: SciEng | SE = F, W, (F, W)
(change in existing course—eff. winter 15)

1C. Physics of California (3)
Lecture—3 hours. Atmospheric phenomena common in California, such as fog, clouds, and microclimates. Applications to CA energy, water, and resource management policies. Physics underlying regional spats in CA. Not open for credit to students who have completed any quarter of Physics 9 or 9H, or any upper division physics course. GE credit: SciEng | SE, VI, SL = F, (F).
(Bradac (new course—eff. fall 14)

90X. Lower Division Seminar (2)
Seminar—2 hours. Prerequisite: lower division standing; consent of instructor. Limited enrollment. Examination of elementary particles and their interactions. Discussion of research topics. Materials shared by all participants. May be repeated for credit. GE credit: SciEng | SE.
(change in existing course—eff. winter 15)

Upper Division

105A. Analytical Mechanics (4)
Lecture—3 hours; extensive problem solving. Prerequisite: courses 9B, 9C, 9D and Mathematics 21D, 22A, and 22B passed with grade C– or better; or consent of department; course 104A and 105A passed with a grade C– or better or consent of department required for 105B. Principles and applications of Newtonian mechanics; introduction to Lagrange’s equations. GE credit: SciEng | SE = F, (F).
(Svoboda (change in existing course—eff. summer 15)

105B. Analytical Mechanics (4)
Lecture—3 hours; extensive problem solving. Prerequisite: courses 9B, 9C, 9D and Mathematics 21D, 22A, and 22B passed with grade C– or better; or consent of department; course 104A and 105A passed with a grade C– or better or consent of department required for 105B. Principles and applications of Newtonian mechanics; introduction to Lagrange’s equations. GE credit: SciEng | SE = W, (W).
(Convoy (change in existing course—eff. summer 15)

130A. Elementary Particle Physics (4)
(Tripathi (change in existing course—eff. summer 15)

130B. Elementary Particle Physics (4)
Lecture—3 hours; extensive problem solving. Prerequisite: course 115A passed with a grade of C– or better or consent of instructor. Properties and classification of elementary particles and their interactions. Theoretical techniques. Conservation laws and symmetries. Strong, electromagnetic, and weak interactions. Introduction to Feynman calculus. GE credit: SciEng | SE = S, (S.)
(Tripathi (change in existing course—eff. summer 15)

140A. Introduction to Solid State Physics (4)
Lecture—3 hours; extensive problem solving. Prerequisite: course 115A or the equivalent passed with a grade of C– or better or consent of instructor. Survey of fundamental ideas in the physics of solids, with selected device applications. Crystal structure, x-ray and neutron diffraction, phonons, simple metals, energy bands and Fermi surfaces, semiconductors, optical properties, magnetism, superconductivity. GE credit: SciEng | SE = W, (W).
(Scalietar (change in existing course—eff. summer 1.5)

140B. Introduction to Solid State Physics (4)
Lecture—3 hours; extensive problem solving. Prerequisite: course 115A or the equivalent passed with a grade of C– or better or consent of instructor. Survey of fundamental ideas in the physics of solids, with selected device applications. Crystal structure, x-ray and neutron diffraction, phonons, simple metals, energy bands and Fermi surfaces, semiconductors, optical properties, magnetism, superconductivity. GE credit: SciEng | SE = S, (S.)
(Scalietar (change in existing course—eff. summer 1.5)

157. Astronomy Instrumentation and Data Analysis Laboratory (4)
Laboratory—8 hours. Prerequisite: course 104A, 105A, 110A; 115A and 110B may be taken concurrently; consent of instructor. Open to Astrophysics Specialization majors. Experimental techniques, data acquisition and analysis, laboratory astrophysics plus stellar, nebular and galactic digital imaging, photometry and/or spectroscopy. Students perform three experiments. Individual work stressed. Minimum 10-15 page journal style article and two experiments are required. Offered in alternate years. GE credit: SciEng | SE, WE = S, (S.)
(Beeshaar, Tyson (change in existing course—eff. winter 15)

160. Environmental Physics and Society (3)
Lecture—3 hours. Prerequisite: course 9D or 7C; or course 10 or 18 and Mathematics 1B or the equivalent passed with grade C– or better or consent of instructor. Environmental physics is discussed from the point of view of the physical sciences. Calculations based on physical principles will be made, and the resultant policy implications will be considered. (Same course as Engineering 160.) GE credit: SciEng or SocSci | SE, SL = S, (S.)
(Cox (change in existing course—eff. winter 16)

190. Careers in Physics (1)
Seminar—2 hours. Restricted to Physics and Applied Physics majors only. Overview of important research areas in physics, discussion of research opportunities and internships, strategies for graduate school and industrial careers, the fellowship and assistantship selection process, preparation of resumes, personal statements, and letters of recommendation. (F, NP grading only.) GE credit: SciEng | SE = F, (F)
(Levine (change in existing course—eff. winter 15)

194HA. Special Study for Honors Students (4)
Independent study—12 hours. Prerequisite: consent of instructor required. Open only to Physics and Applied Physics majors who satisfy the College of Letters and Science requirements for entrance into the Honors Program. Independent research project at a level significantly beyond that defined by the normal physics curriculum. (Deferred grading only, pending completion of sequence). GE credit: SciEng | SE, W, S, (F, W, S)
(change in existing course—eff. summer 1.5)

194HB. Special Study for Honors Students (4)
Independent study—12 hours. Prerequisite: consent of instructor required. Open only to Physics and Applied Physics majors who satisfy the College of Letters and Science requirements for entrance into the Honors Program. Independent research project at a level significantly beyond that defined by the normal physics curriculum. (Deferred grading only, pending completion of sequence). GE credit: SciEng | SE, W, S, (F, W, S)
(change in existing course—eff. summer 1.5)
Graduate

200B. Theory of Mechanics and Electromagnetics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: course 200A, and course 204B concurrently. Theoretical approaches to electromagnetics including classical electromagnetic fields; Maxwell’s equations; plane waves in various media; magneto-hydrodynamics; diffusion theory; radiating systems; and special relativity. —W. (W) Chiang (change in existing course—eff. summer 15)

200C. Theory of Mechanics and Electromagnetics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: course 200A, and course 204B concurrently. Theoretical approaches to electromagnetics including classical electromagnetic fields; Maxwell’s equations; plane waves in various media; magneto-hydrodynamics; diffusion theory; radiating systems; and special relativity. —S. (S.) Knox, Scalatier (change in existing course—eff. summer 15)

204A. Methods of Mathematical Physics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: courses 104A and 104B or the equivalent. Linear vector spaces, operators and their spectral analysis, complete sets of functions, complex variables, functional analysis, Green’s functions, calculus of variations, introduction to numerical analysis. —F. (F) Kaloper, Zieve (change in existing course—eff. summer 15)

204B. Methods of Mathematical Physics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: courses 104A and 104B or the equivalent. Linear vector spaces, operators and their spectral analysis, complete sets of functions, complex variables, functional analysis, Green’s functions, calculus of variations, introduction to numerical analysis. —W. (W) Kaloper, Zieve (change in existing course—eff. summer 15)

215A. Quantum Mechanics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: course 115B or the equivalent. Formal development and interpretation of non-relativistic quantum mechanics; its application to atomic, nuclear, molecular, and solid-state problems; brief introduction to relativistic quantum mechanics and the Dirac equation. —F. (F) Cheng (change in existing course—eff. summer 15)

215B. Quantum Mechanics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: course 115B or the equivalent. Formal development and interpretation of non-relativistic quantum mechanics; its application to atomic, nuclear, molecular, and solid-state problems; brief introduction to relativistic quantum mechanics and the Dirac equation. —W. (W) Cheng (change in existing course—eff. summer 15)

215C. Quantum Mechanics (4)
Lecture—3 hours; independent study—1 hour. Prerequisite: course 115B or the equivalent. Formal development and interpretation of non-relativistic quantum mechanics; its application to atomic, nuclear, molecular, and solid-state problems; brief introduction to relativistic quantum mechanics and the Dirac equation. —S. (S.) Fong (change in existing course—eff. summer 15)

243A. Surface Physics of Materials (3)
Lecture—3 hours. Prerequisite: courses 140A-140B, 115A-115B or the equivalents; courses 215A, 240A, or the equivalents recommended. Experimental and theoretical fundamentals of surface and interfacial physics and chemistry, including electronic and magnetic structure, thermodynamics, adsorption kinetics, epitaxial growth, and a discussion of various spectroscopic and structural probes based on electrons, ions, and scanning probes. Offered irregularly. (change in existing course—eff. summer 15)

243B. Surface Physics of Materials (3)
Lecture—3 hours. Prerequisite: courses 140A-140B, 115A-115B or the equivalents; courses 215A, 240A, or the equivalents recommended. Experimental and theoretical fundamentals of surface and interfacial physics and chemistry, including electronic and magnetic structure, thermodynamics, adsorption kinetics, epitaxial growth, and a discussion of various spectroscopic and structural probes based on electrons, ions, and scanning probes. Offered irregularly. (change in existing course—eff. summer 15)

243C. Surface Physics of Materials (3)
Lecture—3 hours. Prerequisite: courses 140A-140B, 115A-115B or the equivalents; courses 215A, 240A, or the equivalents recommended. Experimental and theoretical fundamentals of surface and interfacial physics and chemistry, including electronic and magnetic structure, thermodynamics, adsorption kinetics, epitaxial growth, and a discussion of various spectroscopic and structural probes based on electrons, ions, and scanning probes. Offered irregularly. (change in existing course—eff. summer 15)

280. Seminar in Ethics for Scientists (2)
Seminar—2 hours. Restricted to 20 students. Graduate standing in any department of science or engineering. Studies of topical and historical issues in the ethics of science, possibly including issues such as proper authorship, peer review, fraud, plagiarism, responsible collaboration, and conflict of interest. Limited enrollment. Same as Chemistry 280 and Chemical Engineering and Materials Science 280J (S/U grading only). —S. (S.) (change in existing course—eff. fall 14)

Professional

371. Teaching in an Active-Engagement Physics Discussion/Lab Setting (1)
Lecture/discussion—1 hour. Prerequisite: course 9D or equivalent; consent of instructor. Open to graduate students only. Analysis of recent research on science/physics teaching and learning and its implications for teaching labs, discussions, and discussion/labs with an emphasis on differences between conventional and active-engagement instructional settings. The appropriate role of the instructor in specific instructional settings. May be repeated twice for credit. —F. W, S. (F, W, S.) (change in existing course—eff. winter 15)

Plant Biology

New and changed courses in Plant Biology (A Graduate Group) (PBI)
Graduate

203N. Biology of the Plant Cell (4)
Lecture—3 hours; discussion/laboratory—2 hours. Prerequisite: Plant Biology 111 or Biological Sciences 104, or the equivalent. Open to senior undergraduate students in Plant Biology major. Recent progresses in plant cell biology. Intracellular mobility in plant cells. Common techniques associated with the progress of plant cell biology. Offered in alternate years. S/U grading only. —Wu (change in existing course—eff. winter 15)

290A. Faculty Seminar (1)
Discussion—1 hour. Restricted to Plant Biology (PBI) graduate students. Discussion of research area of seminar speakers in Plant Biology Graduate Group Seminar Series. May be repeated six times for credit. (S/U grading only). —F, W, S. (F, W, S.) (change in existing course—eff. winter 15)

Upper Division

102. California Floristics (5)
Lecture—3 hours; laboratory—8 hours. Prerequisite: Plant Sciences 2, Biological Sciences 1C, 2C, or equivalent course in Plant Science. Survey of the flora of California, emphasizing recognition of important vascular plant families and genera and use of taxonomic keys for species identification. Current understanding of relationships among families. Principles of plant taxonomy and phylogenetic systematics. One Saturday field trip. (Same course as Plant Sciences 102J) GE credit: SciEng | SE, VL—W, (W) Potter (change in existing course—eff. fall 15)

116. Plant Morphology and Evolution (5)
Lecture—3 hours; laboratory—4 hours. Prerequisite: introductory plant biology (e.g., Biological Sciences 2C, Plant Sciences 2). Introduction to the form, development, and evolution of vascular plants. Emphasis given to the form and development of reproductive structures in ferns and seed-producing plants as a basis for determining evolutionary relationships. Not open for credit to students who have completed Plant Sciences 116. (Same course as Plant Sciences 116J) GE credit: SciEng | SE, VL—W, (W) Jerneelst (change in existing course—eff. winter 15)

148. Introductory Mycology (4)
Lecture—2 hours; laboratory—6 hours. Prerequisite: Biological Sciences 1A, 1B, 1C. Limited enrollment. Systematics, ecology, evolution, and morphology of fungi. Importance of fungi to humans. (Same course as Plant Pathology 148.) GE credit: SE. —F. Mac Donald, Rizzo (change in existing course—eff. winter 15)
Upper Division

101. Epidemiology (4)  
Lecture—2 hours; laboratory—3 hours; discussion—1 hour. Prerequisite: Science and Society 13; Biological Sciences 2A, 2B, 2C; Statistics 15, 100 or Plant Sciences 120. Principles and practice of epidemiology as applied to human, animal, and plant populations and the environment in which these populations co-exist. Quantitative analysis of both infectious and non-infectious disease. Interdependence between epidemiological analysis, decision-making and policy formulation will be highlighted. GE credit: SciEng | OL, SE.—W. (W.) McRoberts, Papageorgiou (new course—eff. winter 15)

102. Disease Intervention and Policy (4)  
Lecture—3 hours; discussion—1 hour; project. Prerequisite: course 101; Science and Society 13; Biological Sciences 2A, 2B, 2C; Pathology, Microbiology and Immunology 129Y; Medicine and Epidemiology 158. Examination of the prevention and treatment of diseases affecting humans, animals, and plants. Case studies will illustrate the merits of a unified approach to promoting health at the local, national, and global levels. GE credit: SciEng | OL, SL.—S. (S.) Rizzo (new course—fall 14)

103. The Microbiome of People, Animals, and Plants (3)  
Lecture—3 hours. Prerequisite: Biological Science 2A, 2B, 2C. Examination of the structure and function of microbial communities that live inside and on host organisms. Introduction to general concepts of the microbiome and microbiota, and their relationship to host health and disease. GE credit: SciEng | OL, SE.—F. (F.) Cook, Leveau (new course—eff. winter 15)

148. Introductory Mycology (4)  
Lecture—2 hours; laboratory—6 hours. Prerequisite: Biological Sciences 1A, 1B, 1C. Limited enrollment. Systematics, ecology, evolution, and morphology of fungi. Importance of fungi to humans. (Same course as Plant Biology 148.) GE credit: SE.—F. MacDonald, Rizzo (change in existing course—eff. winter 15)

185. Advanced Mushroom Taxonomy (2)  
Laboratory/discussion—3 hours; fieldwork—1 hour. Prerequisite: course 135 or 148, and Biological Sciences 101 or the equivalent. Class size limited to 12 students. Microscopic and molecular methods used in the identification of mushroom species; molecular characterization including PCR-amplication of ribosomal nuclear DNA, digestion of the product with restriction enzymes, and DNA sequencing; one-day trip to field site required. Offered in alternate years.—F. Davis (change in existing course—eff. winter 15)

187. Global Disease Biology Seminar (3)  
Seminar—1 hour; discussion—1 hour; term paper. Prerequisite: junior standing, course 90, Science and Society 13. Open to Global Disease Biology majors. Seminar leading to development of the research proposal and academic plan for the Global Disease Biology major.—F. (F.) (new course—eff. winter 15)

189. Global Disease Biology Senior Research (3)  
Independent study—3 hours. Prerequisite: senior standing, courses 90, 187; course 189D concurrently the first time course 189 is taken), Science and Society 13. Restricted to Global Disease Biology majors only. Capstone research experience for the Global Disease Biology Major. Project may be experimental, library research, or some other creative activity. May be repeated one time for credit while research is conducted over two quarters; second quarter used to finish research paper.—F, W, S. (F., W., S., S.) (new course—eff. winter 15)

193. Garden and Farm-Based Experiential Education Methods (2)  
Lecture—1 hour; laboratory—3 hours. Prerequisite: upper division standing or consent of instructor. Methods of teaching children and youth about fruit and vegetables, involving all ages. Lesson and activity planning for garden and farm field trips. Basic biology, ecology, plant science, and crop management practices. Mentorship in experiential learning. Preparation of garden site. (Deferred grading only) GE credit: SciEng | OL, SE.—W. (W.) Van Horn (new course—eff. winter 15)

Graduate

206A. Diseases of Fruit, Nut, and Vine Crops (3)  
Lecture—2 hours; laboratory—6 hours. Prerequisite: course 120; Plant Biology 119. Course 205 may be taken concurrently. Clinical study of fruit, nut, and vine crops diseases with emphasis on etiology, epidemiology, diagnosis, and control. Offered in alternate years. (Deferred grading only; pending completion of sequence.)—S. (S.) Kirkpatrick (change in existing course—eff. summer 15)

206B. Diseases of Fruit, Nut, and Vine Crops (1)  
Lecture—2 hours; laboratory—6 hours. Prerequisite: course 120; Plant Biology 119. Course 205 may be taken concurrently. Clinical study of fruit, nut, and vine crops diseases with emphasis on etiology, epidemiology, diagnosis, and control. Offered in alternate years. (Deferred grading only; pending completion of sequence.)—Su. (Su.) Kirkpatrick (change in existing course—eff. summer 15)

Plant Sciences

New and changed courses in Plant Sciences (PLS)

Upper Division

100AL. Metabolic Processes of Cultivated Plants Laboratory (2)  
Laboratory/discussion—3 hours; fieldwork—1 hour. Prerequisite: course 135 or 148, and Biological Sciences 101 or the equivalent. Class size limited to 12 students. Microscopic and molecular methods used in the identification of mushroom species; molecular characterization including PCR-amplication of ribosomal nuclear DNA, digestion of the product with restriction enzymes, and DNA sequencing; one-day trip to field site required. Offered in alternate years.—F. Davis (change in existing course—eff. winter 15)

100BL. Growth and Yield of Cultivated Plants Laboratory (2)  
Laboratory/discussion—3 hours. Prerequisite: course 100B or equivalent (may be taken concurrently). Laboratory exercises in plant growth and development and their regulation, including photosynthesis, enzyme kinetics, microsomal nuclear DNA, digestion of the product with restriction enzymes, and DNA sequencing; one-day trip to field site required. Includes field trips to illustrate relationships to cropping and marketing systems. GE credit: SciEng | OL, SE.—(W.) Bradford (change in existing course—eff. fall 07)

100CL. Environmental Interactions of Cultivated Plants Laboratory (2)  
Laboratory/discussion—3 hours. Prerequisite: course 100C (may be taken concurrently). Techniques and instruments used to study plant interactions with their physical and biological environments, including light responses, transpiration, microclimate, nutrient availability and utilization, biomass accumulation. Quantitative methods and modeling are emphasized. GE credit: SciEng | SE.—S. (S.) Shacklet (change in existing course—eff. fall 07)

112. Forage Crop Ecology (3)  
Lecture—3 hours. Prerequisite: course 2, Biological Sciences 1C, 2C, or consent of instructor. Forages as a world resource in food production. Ecological principles governing the adaptation, establishment, growth, and management of perennial and annual forages, including pastures, rangelands and hay, aspects of forage quality which affect feeding value to livestock. Not open for credit to students who have completed Agricultural Management and Rangeland Resources 112. (Former course Agricultural Management and Rangeland Resources 112.) Offered in alternate years. GE credit: SciEng | SE.—W. (W.) Delong (change in existing course—eff. fall 15)

113. Biological Applications in Fruit Tree Management (2)  
Lecture—1 hour; laboratory—3 hours. Prerequisite: course 2, Biological Sciences 1C, 2C or equivalent. Physiology, growth, development and environmental requirements of fruit trees and the cultural practices used to maintain them. Emphasis on the application of biological principles in the culture of commercially important temperate zone fruit tree species. Not open for credit to students that have completed Plant Biology 173. (Former course Plant Biology 173.) GE credit: SciEng | SE.—W. (W.) Jerndt (new course—eff. winter 15)

140. Culinary and Medicinal Herbs (3)  
(cancelled course—eff. winter 16)

142. Ecology of Crop Systems (4)  
(cancelled course—fall 11)

145. Sierra Nevada Flora (3)  
(cancelled course—eff. spring 15)

150. Sustainability and Agroecosystem Management (4)  
Lecture—3 hours; laboratory—3 hours. Prerequisite: Soil Science 10; Chemical and Physical Sciences 2, Biological Sciences 1C or 2C. Interdisciplinary analysis of agricultural production and food systems with primary emphasis on biophysical processes. General concepts governing the functioning of temperate and tropical ecosystems and the effect on resource availability, ecological sustainability, and
154. Introduction to Plant Breeding (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: course 152, Biological Sciences 101 or consent of instructor. Principles, methods and applications of plant breeding and genetics to the improvement of crop plants. Illustration of how plant breeding is a dynamic, multidisciplinary, constantly-evolving science. Laboratory emphasizes hands-on experience in the basics of breeding through experiments. Not open for credit to students who have completed Plant Biology 154. (Former course Plant Biology 154.) GE credit: SciEng | SE. —W. (W.) St. Clair

(change in existing course—eff. fall 15)

160. Agroforestry: Global and Local Perspectives (3)
Lecture/discussion—3 hours. Prerequisite: course 2 or Biological Sciences 122, 125, 142 or 150 or Biological Sciences 28 or a general ecology course. Traditional and evolving uses of trees in agricultural ecosystems, their multiple roles in environmental stabilization and production of food, fuel, and fiber; and socioeconomic barriers to the adoption and implementation of agroforestry practices. Not open for credit to students who have previously taken Agricultural Management and Rangeland Resources 160. (Former course Agricultural Management and Rangeland Resources 160.) Offered in alternate years. GE credit: SciEng | SE. —F. Grudziel

(change in existing course—eff. fall 15)

162. Urban Ecology (3)

(change in existing course—eff. fall 15)

163. Ecosystem and Landscape Ecology (4)
Lecture/discussion—4 hours. Prerequisite: course in general, plant, or soil ecology; Evolution and Ecology 117, Plant Biology 117, Environmental Science and Policy 100, Evolution and Ecology 101, Soil Science 112. Integration of concepts to understand and manage ecosystems in a complex and changing world. Emphasis on interactions among biotic, abiotic and human factors and changes over space/time. Local to global controls over water, carbon and nutrients across ecosystems/landscapes. Not open for credit to students who have completed Ecology 201. —W. (W.) Cadness, Eviner

(change in existing course—eff. fall 15)

164. Practicum in Ecological Restoration (1)
Fieldwork—3 hours. Prerequisite: Environmental Horticulture 160 recommended. Hands-on field course that exposes students to various aspects of ecological restoration throughout the seasonal restoration cycle with real world practitioners. Emphasis on grassland/rangeland, riparian, and oak woodland communities. May be repeated three times for credit. —F. W. S. [F. W. S.] Young

(change in existing course—eff. spring 15)

178. Biology and Management of Aquatic Plants (3)
Lecture—2 hours. Prerequisite: course 2, Biological Sciences 1C or 2C, Chemistry 88 or 118B, course 100C, Plant Biology 111, Environmental Horticulture 102, or Hydrologic Science 122 recommended. Brief survey of common and invasive fresh water plants and macroalgae, their reproductive modes, physiology, growth (photosynthesis, nutrient utilization), development (flloral interactions), ecology, modes of impacts of invasion, and management. Two Saturday field trips required. Not open for credit to students who have completed former course Plant Biology 178. (Former course Plant Biology 178.) Offered in alternate years. GE credit: SciEng | SE. —F. Anderson

(change in existing course—eff. fall 15)

193. Garden and Farm-Based Educational Practices of HPLC (2)
Lecture—3 hours; seminar—1 hour. Prerequisite: graduate standing or advanced undergraduate with consent of instructor. Cross-disciplinary review of forest biology, including physiology, genetics, pathology, ecology, and silviculture. —S. J. Neale, North, Richards, Rizzo, Schwartz

(canceled course—eff. winter 15)

Graduate

211. Principles and Practices of HPLC (2)
Lecture—3 hours; seminar—1 hour. Prerequisite: graduate standing or advanced undergraduate with consent of instructor. Cross-disciplinary review of forest biology, including physiology, genetics, pathology, ecology, and silviculture. —S. J. Neale, North, Richards, Rizzo, Schwartz

(canceled course—eff. winter 15)

Political Science

New and changed courses in Political Science (POL)

Lower Division

7. Contemporary Issues in Law and Politics (4)
Seminar—4 hours. Limited enrollment; open to students having no more than 40.1 units. Seminar focusing on the political dimensions of American law and institutions. Examines the role of courts in resolving contemporary issues of law and politics including abortion, capital punishment, and civil rights. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE.

(change in existing course—eff. winter 15)

90X. Lower Division Seminar (4)
Seminar—4 hours. Lower division standing; consent of instructor. Limited enrollment. Examines fundamental issues and concepts that shape the study and practice of politics. Students will read, discuss and write about some of the most significant texts in political science in order to develop a foundation for the study of politics. Offered irregularly. (change in existing course—eff. winter 15)

Upper Division

100. Local Government and Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Politics and government of local communities in the United States, including cities, counties and special districts. Emphasizes sources and varieties of community conflict, legislative and executive patterns, expertise, decision making and the politics of structure. Observation of local governing boards. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE.

(change in existing course—eff. spring 16)

102. Urban Public Policy (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended; consent of instructor. Political and economic relationships among federal, state, and local governments. Focuses upon policy areas such as poverty, transportation, welfare, and housing, and upon who governs and who benefits from the policies in these areas. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, QL, SS, WE.

(change in existing course—eff. spring 16)

104. California State Government and Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The legislative process with emphasis on the roles of the legislature, the governor, the judiciary, and the courts. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE.

(change in existing course—eff. spring 16)

105. The Legislative Process (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The legislative process with emphasis on the roles of the legislature, the governor, the judiciary, and the courts. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE.

(change in existing course—eff. spring 16)

106. The Presidency (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The American presidencies origins and development; presidential power and influence as manifest in relationships with Congress, courts, parties, and the public. Focuses upon the formulation and administration of foreign and domestic policy; nominations, campaigns, and elections. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE.

(change in existing course—eff. spring 16)

107. Environmental Politics and Administration (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 recommended. Introduction to the environment as a political issue in the United States and to the development of administrative mechanisms for handling environmental problems. Changing role of Congress, the presidency, the bureaucracy, and the courts in environmental policy formulation and implementation. Offered irregularly. GE credit: SocSci, Wrt | ACGH, QL, SS, WE.

(change in existing course—eff. spring 16)

108. Policy Making in the Public Sector (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended; consent of instructor. Theoretical rationale for governmental activity, program evaluation, PPBS, policy implementation, and proposals for improved decision making. GE credit: SocSci, Wrt | ACGH, QL, SS, WE.

(change in existing course—eff. spring 16)

109. Public Policy and the Governmental Process (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The processes of formulating public policy, including individual and collective decision making, political exchange, com-
petition, bargaining, coalition formation and the allocation of public goods, resources and opportunities. Offered irregularly. GE credit: SocSci, Wrt | ACGH, QL, SS, WE.

(change in existing course—eff. spring 16)

110. The Strategy of Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Introduction to game theory. Explanation of the behavior of individuals in strategic interaction. Rational and behavioral approaches. Applications to political science and other fields. Offered irregularly. GE credit: SocSci, Wrt | QL, SS, WE.

(change in existing course—eff. spring 16)

112. Contemporary Democratic Theory (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Major contemporary attempts to re-formulate traditional democratic theory, attempts to replace traditional theory by conceptual models derived from modern social science findings. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

113. American Political Thought (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Origins and nature of American political thought. Principles of American thought as they emerged from the founding period to the present. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | ACGH, AH or SS, WE.

(change in existing course—eff. spring 16)

114. Quantitative Analysis of Political Data (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 51 recommended. Logic and methods of analyzing quantitative political data. Topics covered include central tendency, probability, correlation, and non-parametric statistics. Particular emphasis will be placed on understanding the use of statistical models in political science research. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS or SE, QL, VL, WE.

(change in existing course—eff. spring 16)

115. Medieval Political Thought (4)
Lecture—3 hours; term paper. Prerequisite: course 4 recommended. Examination of the ideas central to medieval political thought. Emphasis will be upon the thoughts of the major political thinkers of the period, rather than upon political history. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS or SE, QL, VL, WE.

(change in existing course—eff. spring 16)

116. Foundations of Political Thought (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Analysis and evaluation of the seminal works of a major political philosopher or of a major problem in political philosophy. May be repeated one time for credit when topic differs. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

117. Topics in the History of Political Thought (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. The political thought of a specific historical period. Topics may include: Ancient Athens, the Italian Renaissance, the Enlightenment, or Nineteenth Century Germany. May be repeated once for credit. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

118A. History of Political Theory: Ancient (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Critical analyses of classical and medieval political philosophers such as Plato, Aristotle, Cicero and St. Thomas. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

118B. History of Political Theory: Early Modern (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Critical analysis of the works of late modern political philosophers such as Hobbes, Locke, Spinoza, Bentham, Hume, Tocqueville, Mill, Marx and Nietzsche. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

118C. History of Political Theory: Late Modern (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Critical analysis of the works of late modern political philosophers such as Rousseau, Kant, Hegel, Tocqueville, Mill, Marx and Nietzsche. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

119. Contemporary Political Thought (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Contemporary political theories from the end of the nineteenth century to the present. Emphasis upon an individual philosopher, concept or philosophical movement, e.g., Nietzsche, Continental political theory, Rawls and justice, theories of power, liberal, conservative, libertarian, feminist theory. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | AH or SS, WE.

(change in existing course—eff. spring 16)

120. Theories of International Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended; consent of instructor. Major contemporary approaches to the study of international politics, including balance of power, game theory, Marxist-Leninist theory, systems theory, and decision-making analysis. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

121. Scientific Study of War (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended; consent of instructor. An analysis of political processes involved in the initiation, conduct and termination of modern interstate warfare. Offered irregularly. GE credit: SocSci, Wrt | QL, SS, WE.

(change in existing course—eff. spring 16)

122. International Law (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended. Selected topics in international law; territory, sovereignty immunity, responsibility, the peaceful settlement or non-settle- ment of international disputes. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

123. The Politics of Interdependence (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended; consent of instructor. In the past several decades, growing economic interdependence has created new problems in international relations. Course deals with difficulties in managing complex interdependence and its implications for national policies and politics. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

124. The Politics of Global Inequality (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended. Analysis of current economic and political international relations resulting from a long standing division of the global system into rich and poor regions. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

125. Ethnic Self-Determination and International Conflict (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended. Compares the claims of the state and ethnic peoples in countries undergoing internal conflicts, e.g., South Africa, Northern Ireland. Analyzes the role of the interna- tional community in facilitating the peaceful resolu- tion of conflicts. Offered irregularly. GE credit: SocSci, Div, Wrt | SS, WE.

(change in existing course—eff. spring 16)

129. Special Studies in International Politics (4)
Lecture—3 hours; term paper. Prerequisite: course 3 recommended. Intensive examination of one or more special problems in international politics. May be repeated one time for credit when different topic is studied. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. - W.

(change in existing course—eff. spring 16)

130. Recent U.S. Foreign Policy (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended, consent of instructor. Broad survey of U.S. foreign policy in the post-WWII period, interpreting the role of significant actors and forces in shaping U.S. foreign policy. Offered irregularly. GE credit: ArtHum or SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

131. Analysis of U.S. Foreign Policy (4)
Lecture—3 hours; term paper. Prerequisite: course 3 recommended; consent of instructor. Detailed presentation and examination of the formulation of execution of U.S. foreign policy. Survey of numerous factors influencing policy outcomes and how such determinants vary according to policy issue areas. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

132. National Security Policy (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended. Development of national security policies since 1945. Analysis of deterrence and assumptions upon which it is based. Effects of nuclear weapons, nuclear proliferation, conduct of war, alliance systems, and the international system. Prospects of security and stability through arms control. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

(change in existing course—eff. spring 16)

134. Africa and U.S. Foreign Policy (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 recommended; consent of instructor. Overview of American foreign policy toward Africa. Relationship to global adversaries. Legacies of colonialism. Challenge of national self-determination and white racism. Policies on non-alignment, producer cartels, multinational corporations, continental integration and trade and aid relations. Offered irregularly. (change in existing course—eff. spring 16)

135. International Politics of the Middle East (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 3 recommended; consent of instructor. Restricted to upper division standing. International politics of the Middle East as a microcosm of world politics. The Middle East as a regional sys- tem. Domestic and International Politics in the Mid- dle East. Changing Political Structures in the Middle
140C. Comparative Political Institutions: Electoral Systems (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Works of electoral institutions, focusing on systems used to elect presidents and assemblies, pass laws, and generally make decisions. Examples from systems throughout the world, including cases from both the advanced industrial and developing worlds. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

140A. Comparative Political Institutions: Parties (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. The factors shaping political parties and their role in democratic representation. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WE.

140B. Comparative Political Institutions: Legislatures (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. Examination of legislatures from a comparative perspective. Offered irregularly. GE credit: SocSci, Wrt | SS, WE.

140D. When Institutions Fail (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Examination of factors contributing to the success and failure of political institutions. Offered in alternate years. GE credit: QL, SS, WE | F, S, F, S.

142B. Comparative Development: Democracy and Democratization (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Examination of conditions promoting democratization and democratic stability. Offered irregularly. GE credit: SS, WE | F, S, F, S.

142A. Comparative Development: Political Development in Modernizing Societies (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. Nature and sequence of political development; its economic and social consequences; role of elites, military, bureaucracy, and party systems; impact of civil rights legislation, the politics of welfare states, and the effects of political participation on the distribution of goods. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

142C. Comparative Political Development: Electoral Systems (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political systems in selected political systems of Western Europe. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

142F. Politics of Africa: Development in Africa (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Political and economic development within Sub-Saharan Africa. States and institutions, democracy, party systems, military coups/rule, and party systems; social stratification and group politics; social mobilization and political participation; instability, violence, and the politics of integration. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WE.

142G. Politics of Africa: Insecurity (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. The politics of insecurity. Ethnicity, national/regional integrations, trade unions, economic development strategies, class formation, and women’s roles and ideology. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WE.

144A. Government and Politics of East Asia: Japan (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political institutions and political culture in China with emphasis on the post-1949 period. Primary attention to nationalism, modernization and political efficacy. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

144B. Government and Politics of East Asia: Southeast Asia (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political institutions and economy of selected nations in Southeast Asia. Emphasis on imperial legacy, nation building in multi-ethnic communities, and contrasts in economic performance. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

144C. Government and Politics of East Asia: Korea (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political institutions and economy of selected nations in East Asia. Emphasis on the Cold War and after. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

145A. Latin American Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Issues related to democratic consolidation in Latin America, with a regional focus on South America. Topics include transitions to democracy, the role of the military, political economy, and political behavior. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

145B. Mexican Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Introduction to the politics of contemporary Mexico. Focus on rise, fall, and aftermath of Mexico’s one-party dominant system. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

145C. Mexican Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Post-war democratization, state-building and economic reform in East European states. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

145D. Government and Politics in East Asia (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Political science and International Relations Majors. Evolution, politics and contemporary problems of France’s political system. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

145G. Politics of Post-Communist Countries: Eastern Europe (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Democratization, state-building and economic reform of the Former Soviet Union and Eastern Europe. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.


146B. Politics of Africa: Development in Africa (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Political and economic development within Sub-Saharan Africa. States and institutions, democracy, party systems, military coups/rule, and party systems; social stratification and group politics; social mobilization and political participation; instability, violence, and the politics of integration. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WE.

147A. West European Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. The evolution, politics, and contemporary problems of selected political systems of Western Europe. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

147B. West European Politics: British Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. The evolution, politics, and contemporary problems of Britain’s political system. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

147C. West European Politics: French Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. The evolution, politics, and contemporary problems of France’s political system. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

147D. West European Politics: German Politics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Political Science & International Relations Majors. Evolution, politics and contemporary problems of Germany’s political system. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

148A. Government and Politics of East Asia: China (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political institutions and political culture in China with emphasis on the post-1949 period. Primary attention to nationalism, modernization and political efficacy. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.

148B. Government and Politics in East Asia (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political parties, elections, political economy, and social problems. Offered irregularly. GE credit: SocSci, Div | Wrt | SS, WC, WE.

148C. Government and Politics in East Asia: Japan (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended. Evolution of political institutions and political culture in Japan with emphasis on the postwar period. Particular emphasis on political parties, elections, political economy, and social problems. Offered irregularly. GE credit: SocSci, Wrt | SS, WC, WE.
150. Judicial Politics and Constitutional Interpretation (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Politics of judicial policy making, issues surrounding constitutional interpretation and decision making, prerequisite for course on the politics of constitutional law. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

151. The Constitutional Politics of the First Amendment and the Right to Privacy (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Constitutional politics surrounding such issues as the right to free speech, associational rights, the right to free exercise of religious beliefs and the right to privacy. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

153. The Constitutional Politics of the Justice System (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Constitutional politics of the American criminal justice system. Issues surrounding constitutional doctrine and judicial policymaking on issues such as search and seizure, trial, trial, and incarceration and other issues of due process. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE. [change in existing course—eff. spring 16]

154. Legal Philosophy (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Analysis of the nature and functions of law; law as an instrument of social control and the relationship between law and morality. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE. [change in existing course—eff. spring 16]

155. Judicial Process and Behavior (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Analysis of the behavior of judges and courts in the political process. Techniques of judicial decision making. Relations among courts and other decision-making bodies. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE. [change in existing course—eff. spring 16]

162. Elections and Voting Behavior (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Analysis of American elections and partisan behavior; political socialization, political participation, partisanship and individual and group determinants of voting. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

163. Group Politics (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Groups, institutions and individuals, especially in American politics. Historical and analytical treatment of group theories as applied to interest groups (especially labor, business, agriculture, science, military); to racial, ethnic and sectional groups; to parties, public and legislative groups, bureaucracies. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

164. Public Opinion (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended; consent of instructor. Nature of public opinion in America as it is supposed to be and as it is. Distribution of opinions among different publics and the significance of that distribution for system stability and institutions. Opinion polling and its problems. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

165. Mass Media and Politics (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Organization of and decision making within the media; media audiences and the effect of the media on attitudes and behavior. The relationship of the government to the media (censorship, secrecy, freedom of the press, government regulation); the media in election campaigns. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

166. Chicano Politics (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Political aspects of Chicano life in America; examines the Chicanos political role as it has been historically defined by different groups in society and the Chicanos responses to his/her political environment. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

168. American Political Development (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Historical and analytical treatment of group theories as applied to interest groups (especially labor, business, agriculture, science, military); to racial, ethnic and sectional groups; to parties, public and legislative groups, bureaucracies. Offered irregularly. GE credit: SocSci, Wrt | ACGH, DD, SS, WE. [change in existing course—eff. spring 16]

170. Political Psychology (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Overview to the growing literature on political psychology. Introduction to how psychological concepts (personality, attitudes, stereotypes, heuristics, affect, identity, group dynamics) help us understand how citizens think about politics. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

171. The Politics of Energy (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Nature and performance of political processes for making energy choices. National and state levels. Interaction of energy policy with other political goals and the ability of governmental institutions to overcome constraints on policy innovation. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

172. American Political Development (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Systematic analysis of contemporary issues in American political development; determinants of political change; the timing and character of institutional development; conditions for successful political action. Democratization, cultural change, party formation, state building, constitutionalism, race relations. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

174. Government and the Economy (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. Political basis of economic policy (taxation, spending and regulation); impact of prices, employment and growth on political demands; elite responses to economic conditions; policy alternatives and the public interest. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

175. Science, Technology, and Policy (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended; consent of instructor. Analysis of policymaking for science and technology; implications of rapid technological and social change for bureaucratic structures and processes; the problems of reconciling expertise and democracy and increasing the responsiveness of public bureaucracy. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE. [change in existing course—eff. spring 16]

179. Special Studies in Comparative Politics (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 2 recommended; consent of instructor. Intensive examination of one or more special problems appropriate to comparative politics. Coverage is given to formal and informal political institutions, economically developing and developed countries, and non-democratic, democratic, and democraticizing countries. May be repeated one time for credit. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

180. Bureaucracy in Modern Society (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The implications for American public administration of evolving concepts about behavior in organizations. Offered irregularly. GE credit: SocSci, Wrt | ACGH, SS, WE. [change in existing course—eff. spring 16]

183. Administrative Behavior (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1 recommended. The implications for American public administration of evolving concepts about behavior in organizations. Offered irregularly. GE credit: SocSci, Wrt | SS, SS, WE. [change in existing course—eff. spring 16]

187. Administrative Theory (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 4 recommended. Historical and critical analysis of the principal theories of organizational and management of public agencies in light of such concepts as decision making, bureaucracy, authority and power, communication and control, examination of role of government bureaucracies in the total society. Offered irregularly. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. spring 16]

190. International Relations (4) Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: consent of instructor. Open to majors in International Relations, or consent of instructor. Analysis and evaluation of substantive issues in contemporary international relations. Readings drawn from current academic and non-academic periodicals. GE credit: SocSci, Wrt | SS, WE. [change in existing course—eff. winter 15]

192W. Internship in the UC Davis Washington Center Program (7) (cancelled course—eff. winter 16)

194. Special Study for Honors Students (4) Seminar—2 hours; independent study—2 hours. Prerequisite: major in Political Science with upper division standing and a GPA of 3.500 in the major. Directed reading, research and writing culminating in preparation of a senior honors thesis under the
direction of faculty adviser. (Deferred grading only, pending completion of sequence.) Offered irregularly. GE credit: SocSci | DL, SS, VL, WE. (change in existing course—eff. summer 15)

194HB. Special Study for Honors Students (4)
Seminar—2 hours, independent study—2 hours. Prerequisite: major in Political Science, or GPA of 3.500 in the major. Directed reading, research and writing culminating in preparation of a senior honors thesis under the direction of faculty adviser. (Deferred grading only, pending completion of sequence.) Offered irregularly. GE credit: SocSci | DL, SS, VL, WE. (change in existing course—eff. summer 15)

Graduate

211. Research Methods in Political Science (4)
Seminar—3 hours, laboratory/discussion—1 hour. Prerequisite: graduate standing. Pass One open to graduate majors; Pass Two open to graduate students. Introductory seminar on the foundations of probability theory and mathematical statistics that are critical to empirical investigations in political science. —F (F. Joyce (change in existing course—eff. winter 15)

212. Quantitative Analysis in Political Science I (4)
Seminar—3 hours, laboratory/discussion—1 hour. Prerequisite: course 211. Pass One open to graduate majors; Pass Two open to graduate students. Seminar provides students with an introduction to the linear regression model. Students who complete the course will have a working knowledge of basic regression techniques and problems. —W. (W.) Huckfeldt (change in existing course—eff. winter 15)

214A. Research in Political Science (4)
Discussion—2 hours; lecture—1 hour; term paper. Prerequisite: course 213. Advanced level graduate students in the Department of Political Science only. Research seminar sequence required of all Ph.D. students. Design, execution, and defense of an original piece of research in political science, culminating in a paper of publishable quality. (Deferred grading only, pending completion of sequence.) (change in existing course—eff. winter 15)

214B. Research in Political Science (4)
Discussion—2 hours; lecture—1 hour; term paper. Prerequisite: courses 212 and 214A. Advanced level graduate students in the Department of Political Science only. Research seminar sequence required of all Ph.D. students. Design, execution, and defense of an original piece of research in political science, culminating in a paper of publishable quality. (Deferred grading only, pending completion of sequence.) (change in existing course—eff. winter 15)

220. Seminar in Political Theory (4)
Seminar—3 hours, term paper. Prerequisite: graduate standing. Open to graduate students only. Introduction to political theory and current debates over its study. Readings from and textual interpretations of political theory including the Federalist Papers and major works by thinkers such as Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, and Rawls. Other readings addressing issues of textual interpretation. (change in existing course—eff. winter 15)

229. Theories of International Relations (4) (canceled course—eff. winter 15)

280. Bayesian Methods: for Social and Behavioral Sciences (4)
Seminar—3 hours; term paper. Prerequisite: course 212 or equivalent. Pass One open to graduate majors only; Pass Two open to graduate students. Methodology seminar introducing Bayesian quantitative methods to issues and problems in political science and other social and behavioral sciences. Offered in alternate years. (change in existing course—eff. winter 15)

281. Statistical Computing Issues in Political Science (4)
Seminar—3 hours; discussion/laboratory—1 hour. Prerequisite: course 213 or equivalent. Restricted to graduate standing. Methodology seminar introducing computing issues in empirical models for political science and other social and behavioral sciences. Offered in alternate years. (change in existing course—eff. winter 15)

Population Biology

New and changed courses in Population Biology (PBG)

Graduate

206. Ecology of Insect Parasitoids (4)
Lecture—3 hours; seminar—1 hour. Prerequisite: introductory animal ecology or behavior. Insect parasitoids will be investigated as model systems to address current topics in behavioral, population, and evolutionary ecology. Theory will be synthesized and critical empirical tests of ecological hypotheses emphasized. Offered in alternate years. (change in existing course—eff. fall 14)

221. Animal Behavior, Ecology and Evolution (3)
Lecture—3 hours. Prerequisite: Neurobiology, Physiology, and Behavior 102, Evolution and Ecology 100, 101 or the equivalent, graduate standing, and consent of instructor. Interface between animal behavior, ecology and evolution. New developments in behavioral ecology and development and testing of hypotheses in this discipline. (Same course as Animal Behavior 221.)—F (F. Stamps (change in existing course—eff. fall 14)

270. Research Conference in Evolutionary Biology (1)
Seminar—1 hour. Prerequisite: consent of instructor. Critical presentation and evaluation of current literature and ongoing research in evolutionary biology. May be repeated for credit. (S/U grading only) (F, W, S. (F, W, S. (change in existing course—eff. winter 15)

Professional Accountancy

New and changed courses in Professional Accountancy (ACC)

Graduate

201. Financial Reporting (4)
Lecture—4 hours. Restricted to Master of Professional Accountancy graduate students. Coverage includes the fundamentals of accounting and reporting economic events and transactions. Emphasizes the preparation of balance sheets, income statements, statements of cash flow, and statements of stockholders’ equity. Not open for credit to students who have taken any Management 200A. —F (change in existing course—eff. winter 16)

Lecture—4 hours. Prerequisite: course 201 or Management 200A. Restricted to students enrolled in the Master of Professional Accountancy degree program. Focuses on the preparation of complex financial statements. Topics include accounting recognition, measurement, and disclosure, as well as the theoretical foundations of and motivations for financial reporting choices. Not open for credit to students who have taken any Management 200A. —W. (W) (change in existing course—eff. fall 15)

205. Advanced Financial Reporting (4)
Lecture—4 hours. Prerequisite: course 203. Restricted to graduate students in Graduate School of Management. Advanced treatment of recognition, measurement, and disclosure including pensions, accounting for income taxes, mergers and acquisitions, consolidations, special purpose entities, and foreign subsidiaries. Includes accounting for govern-
mental and nonprofit entities, as well as advanced treatment of international accounting standards. — S. (S.)

211. Tax Reporting and Analysis (4)
Lecture—4 hours. Restricted to Master of Professional Accountancy graduate students. Introduction to the taxation of business entities and their related transactions, with an emphasis on the details of tax law and tax reporting requirements. Topics include individual, partnership, and corporate taxation, as well as tax theory. Not open for credit to students who have completed any Management 264. — F. (F.)

213. Intermediate Tax Reporting and Analysis (4)
Lecture—4 hours. Prerequisite: course 211; any Management 264. Restricted to graduate students in the Graduate School of Management. Detailed analysis of federal taxation of individuals. Topics include the timing of income recognition, deductions and credits for tax purposes, as well as the basics of property transactions. — W. (W.)

215. Advanced Tax Reporting and Analysis (4)
Lecture—4 hours. Prerequisite: course 213. Restricted to graduate students in Graduate School of Management. Advanced treatment of complex tax transactions and entities. Topics include aspects of federal taxation of entities and the applicable impact upon tax return. Coverage includes basis analysis as applicable to pass through entities and an introduction to professional responsibilities. — S. (S.)

217. Taxation of Individuals, Property, and Estates (4)
Lecture—4 hours. Prerequisite: course 213. Restricted to graduate students in Graduate School of Management. In-depth analysis of individual income tax issues and property transactions including non-taxable exchanges, compensation, gifts, and transfer taxes. Emphasized is analysis of multistate tax issues. Emphasis is on the interrelationships of complex individual transactions as well as planning techniques. — S. (S.)

219. Taxation of Business Entities (4)
Lecture—4 hours. Prerequisite: course 213. Restricted to graduate students in Graduate School of Management. Analysis of detailed business entity tax issues including basis calculations, alternative minimum tax, multistate and multinational taxation, stock transactions, and mergers and acquisitions. Tax planning for entities and relationships between business entities and their owners. Offered irregularly. — S. (S.)

231. Analysis and Use of Accounting Reports (4)
Lecture—4 hours. Prerequisite: course 203. Restricted to students enrolled in the Master of Professional Accountancy degree program. Evaluation of complex financial accounting reports by managers and persons outside the firm, such as investors, creditors, and financial analysts. Topics include cash flow vs. income measurement, ratio and valuation analysis, and the effects of international accounting standards. Not open for credit to students who have completed any Management 272. — S. (S.)

241. Auditing and the Accounting Profession (4)
Lecture—4 hours. Prerequisite: course 201; any Management 200A. Restricted to Graduate School of Management students. Introduction to the audit environment, professional standards, the accounting profession, and the professional responsibilities of accountants. Integrate audit topics across the areas of financial, cost, tax, and systems accounting. (S/U grading only.) — F. (F.)

243. Auditing and Attestation Services (4)
Lecture—4 hours. Prerequisite: course 241. Restricted to graduate students in Graduate School of Management. Advanced treatment of the audit process and environment. Topics include audit planning and performance, evidence, internal controls, professional standards, and audit reports. Reviews, compilations and attestations services are examined, as are governmental agency audits. — S. (S.)

251. Managerial Accounting and Controls (4)
Lecture—4 hours. Prerequisite: course 201; any Management 200A. Restricted to graduate students in Graduate School of Management. Analysis of management accounting systems including cost accounting, performance measurement, and compensation and reward systems. Focuses on the production of information useful for managerial decision-making, as well as the design of these systems. Not open for credit to students who have completed any Management 271. — W. (W.)

253. Cost Accounting and Control Systems (4)
Lecture—4 hours. Prerequisite: course 201 or any Management 200A. Restricted to graduate students in Graduate School of Management. Analysis of information systems used for accounting, record-keeping, and control. Topics include the regulatory requirements of accounting control systems as well as their implementation and auditing considerations. Not open for credit to students who have taken any Management 271. — S. (S.)

261. Communications for Professional Accountants (4)
Lecture—4 hours. Prerequisite: course 201 or any Management 200A. Restricted to graduate students in the Graduate School of Management. Overview of written and oral professional communications with an emphasis on documenting audits and reports, understanding audiences (investors, creditors, regulators, and other stakeholders), and consideration of ethical and regulatory responsibilities. Not open for credit to students who have taken any Management 268. — W. (W.)

271. Accounting Ethics (4)
Lecture—4 hours. Prerequisite: course 201; any Management 200A. Restricted to Graduate School of Management students. Analysis of accountants’ professional responsibilities and ethics. Topics include the behavioral foundations of ethics in a business environment, how those elements affect accountants’ integrity, objectivity, and independence. Professional standards related to accountants’ conduct are also covered. — F. (F.)

Psychology

New and changed courses in Psychology (PSC)

41. Research Methods in Psychology (4)
Lecture—3 hours; extensive writing. Prerequisite: course 1 or the equivalent; completion of Statistics 13 or 102 strongly recommended. Introduction to experimental design, interviews, questionnaires, field and observational methods, reliability, and statistical inference. GE credit: QL—F, W, S; [F, W, S] Cross, E. Post

415. Research Methods in Psychology (4)
Lecture/lab—10 hours; web virtual lecture—10 hours. Prerequisite: course 1 or equivalent. Class size limited to 100 students. Introduction to experimental design, interviews, questionnaires, observational research, qualitative approaches, case studies, content analysis, sampling, descriptive statistics, and statistical inference. Not open for credit to students who have taken course 41. Offered irregularly.

90X. Lower Division Seminar (1-2)
Seminar—1-2 hours. Prerequisite: lower division standing; consent of instructor. Limited enrollment. Examination of a special topic in Psychology through shared readings, discussions, written assignments, or special activities such as fieldwork or laboratory work. May not be repeated for credit. Offered irregularly.

Upper Division

100Y. Introduction to Cognitive Psychology (4)
Web virtual lecture—4 hours; discussion—1 hour; lecture—1 hour. Prerequisite: courses 1 and 41. Introduction to human information processing, mental representation and transformation, imagery, attention, memory, language processing, concept formation, problem solving, and computer simulation. Not open for credit to students who have completed former course 136 or current course 100. — W. S. (W. S.) Luck

101. Introduction to Biological Psychology (4)
Lecture—4 hours. Prerequisite: courses 1, 41. Pass One open to majors. Survey and integration of the relationships between behavior and biological processes, including physiology, genes, development, ecology, and evolution. Two units of credit for those students who have completed Neurobiology, Physiology and Behavior 100. — W. S. (W. S.) Cross, Krubitzer, Schank, Stolzenberg, Trion

107. Questionnaire and Survey Research Methods (4)
Lecture/discussion—2 hours; laboratory/discussion—2 hours. Prerequisite: consent of instructor; course 1; course 41 or an equivalent course on social or behavioral research methods. Limited enrollment. Introduction to survey and questionnaire research methods with emphasis on how to ask questions. Social and psychological factors that influence survey response. Practical aspects of fielding survey and questionnaire research. Offered irregularly. GE credit: QL—F. (F.) Herek

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum
120. Agent-Based Modeling (4)
Lecture—4 hours. Prerequisite: course 100 or 101. Class size limited to 24 students. Introduction to agent-based computer simulation and analysis with emphasis on learning how to model animals, including humans, to achieve insight into social and group behavior. GE credit: QL — F. (F. Schank)

(change in existing course — eff. winter 15)

126. Health Psychology (4)
Lecture—4 hours. Prerequisite: course 1, 41, 101. Pass One open to Psychology majors only. Psychological factors influencing health and illness. Topics include stress and coping, personality and health, symptom perception and reporting, heart disease, cancer, compliance, and health maintenance and promotion. Not open for credit to students who have completed former course 160. — W. S. (W. S.) Emmons

(change in existing course — eff. fall 15)

127. Animal Cognition (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: courses 1, 41, 101. Pass One open to Psychology majors. Integrative review of the historical basis, current issues, and scientific methods of studying animal cognition in a wide range of species. Emphasis on learning processes, pattern recognition, and the neurobiology of learning and memory. Not open for credit to students who have completed former course 134. Offered irregularly.

(change in existing course — eff. fall 15)

130. Human Learning and Memory (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1, 41, either 100 or 135, and either Statistics 13 or 102; or consent of instructor. Consideration of major theories of human learning and memory with critical examination of relevant experimental data. — F. W. S. (F. W. S.) Ranganath, Yonelinas

(change in existing course — eff. winter 15)

131. Perception (4)
Lecture—3 hours; independent library work. Prerequisite: courses 1, 41 and 100 or 135. Cognitive organizations related to measurable physical energy changes mediated through sensory channels. Perception of objects, space, motion, events. — W. (W.) Geng

(change in existing course — eff. spring 15)

132. Language and Cognition (4)
Lecture—3 hours; term paper. Prerequisite: courses 1, 41, and either 100 or 135; or consent of instructor. Introduction to the mental and neural representations of musical structures and processes involved in perceiving, remembering, and performing music. Music and emotion. GE credit: WE — F. W. S. (F. W. S.) Long, Swaab, Traxler

(change in existing course — eff. winter 15)

136. Psychology of Music (4)
Lecture/discussion—3 hours; term paper. Prerequisite: courses 1, 41, and either 100 or 135 or Music 6C; or consent of instructor. Introduction to the mental and neural representations of musical structures and processes involved in perceiving, remembering, and performing music. Music and emotion. GE credit: WE — S. (S.) Janata

(change in existing course — eff. winter 15)

140. Developmental Psychology (4)
Lecture—4 hours. Prerequisite: courses 1, 41. Pass One open to Psychology majors. Ontogenetic account of human behavior through adolescence with emphasis on motor skills, mental abilities, motivation, and social interaction. Two units of credit allowed to students who have completed Human Development 100A or 100B. Not open for credit to students who have completed course 112. (Former course 112 — F. W. S. [F. W. S.] Cross, Gibbs, Gwirtz, Oakes

(change in existing course — eff. winter 15)

153. Psychology and Law (4)
Prerequisite: courses 1, 41. Prerequisite: courses 1, 41. Pass One open to Psychology majors. Current theoretical and empirical issues in the study of psychology and law. Topics include eyewitness testimony, child abuse, jury decision making, juvenile delinquency and criminality, prediction of violence, insanity defense, and memory for traumatic events. Not open for credit to students who have completed course 115. Offered in alternate years. — S. Goodman

(change in existing course — eff. winter 15)

157. Stereotyping, Prejudice, and Stigma (4)
Lecture/discussion—4 hours. Prerequisite: courses 1 and 41. Social psychological underpinnings of stereotyping, prejudice, and stigma from sociocultural, motivational, and cognitive perspectives. Topics include: origins, maintenance, change, effects on person perception and memory, and the automaticity/controlability of stereotyping and prejudice. GE credit: DD — W. (W.) Sherman

(change in existing course — eff. fall 14)

158. Sexual Orientation and Prejudice (4)
Lecture/discussion—4 hours. Prerequisite: courses 1, 41. Pass One open to Psychology majors. Current scientific knowledge about sexual orientation and prejudice based on sexual orientation. Emphasis on learning the skills necessary for a critical understanding of science and public policy issues relevant to sexuality. GE credit: SocSci, Div Writ | ACGH, DD, SS, WE — W. (W.) D. Scheib

(change in existing course — eff. winter 15)

159. Gender and Human Reproduction (4)
Lecture—4 hours. Prerequisite: course 1, 41. Pass One open to Psychology majors. Psychology of reproduction. Reproductive events over the course of an individual’s life, including sexual development, mate choice, relationships, and reproduction. Biological and psychological explanations at the levels of mechanism and evolutionary function. Not open for credit to students who have completed former course 149. (Formally course 149 — S. (S.) Scheib

(change in existing course — eff. winter 15)

190X. Upper Division Seminar (1-2)
Seminar—1-2 hours. Prerequisite: upper division standing and consent of instructor. Limited enrollment. In-depth examination at an upper division level of a special topic in Psychology. Emphasis on student participation in learning. May not be repeated for credit. Offered irregularly. — F. W. S. (F. W. S.)

(change in existing course — eff. winter 15)

192. Fieldwork in Psychology (1-6)
Fieldwork—1-6 hours. Prerequisite: upper division standing in psychology and consent of instructor. Limited enrollment. Supervised internship off and on campus, in community and institutional settings. Maximum of four units may be used toward satisfaction of upper division major requirement. May be repeated one time for credit. (P/NP grading only)

(change in existing course — eff. winter 15)

194HA. Special Study for Honors Students (3)
Independent study — 9 hours. Prerequisite: senior standing in Psychology and qualifications for admission into college honors program, and consent of instructor; at least one course from 180A, 180B, 180C or 199 strongly recommended. Directed research. Supervised reading, research and writing leading to submission of a Senior Honors thesis under the direction of faculty sponsor. (Deferred grading only, pending completion of sequence.) GE credit: WE — F. W. S. (F. W. S.)

(change in existing course — eff. summer 15)

194HB. Special Study for Honors Students (3)
Independent study — 9 hours. Prerequisite: senior standing in Psychology and qualifications for admission into college honors program, and consent of instructor; at least one course from 180A, 180B, 180C or 199 strongly recommended. Directed research. Supervised reading, research and writing leading to submission of a Senior Honors thesis under the direction of faculty sponsor. (Deferred grading only, pending completion of sequence.) GE credit: WE — F. W. S. (F. W. S.)

(change in existing course — eff. spring 15)

Graduate
204A. Statistical Analysis of Psychological Experiments (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: Statistics 102 or equivalent; graduate standing in Psychology or consent of instructor. Probability theory, sampling distributions, statistical inference, and hypothesis testing using standard parametric and correlational approaches. Analysis of variance, factorial and repeated measures, and tests of trend. Not open for credit to students who have completed course 206. — F. (F.) Ferrer, Widaman

(change in existing course — eff. spring 15)

204B. Causal Modeling of Correlational Data (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: course 204A or the equivalent and graduate standing in Psychology or consent of instructor. Examina-tion of how to make causal inferences from correlational data in the behavioral sciences. Emphasis is on testing rival causal models using correlations among observed variables. Beginning with multiple regression analysis, discussion advances to path analysis and related techniques. Not open for credit to students who have completed course 207A. — W. (W.) Simonton, Widaman

(change in existing course — eff. spring 15)

204D. Advanced Statistical Inference from Psychological Experiments (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: course 204A or the equivalent; graduate standing in Psychology or consent of instructor. Advanced topics in statistical inference, which may include probability theory, sampling distributions, statistical inference and hypothesis testing, nonparametric statistics, Bayesian approaches, and likelihood analysis of variance. Not open for credit to students who have completed course 205. — S. (S.) Blizos

(change in existing course — eff. spring 15)

205B. Factor Analysis (4)
Lecture—3 hours; term paper. Prerequisite: graduate standing, course 204A and 204B or equivalents or consent of instructor. Theory and methods of factor analysis, including exploratory factor analysis, confirmatory factor analysis, and principal component analysis. Offered in alternate years. — W. Widaman

(change in existing course — eff. winter 15)

205G. Applied Longitudinal Data Analysis (4)
Lecture—3 hours; term paper. Prerequisite: course 204A and graduate standing in Psychology or consent of instructor. Modeling and understanding of intradividual change and interindividual differences in change. Reviews conventional methods and introduces contemporary techniques for modeling intradividual change. Offered in alternate years. — F. Ferrer, Grimm

(new course — eff. fall 14)
Religious Studies

New and changed courses in Religious Studies (RST)

Lower Division

11E. Fundamentalism (4)
(change in existing course—eff. winter 15)

1J. Music, Voice, and the Word (4)
Lecture—3 hours; discussion—1 hour. Exploration of relation between music and musical traditions in various cultures. Investigation of ways music, vocal performance and sound production reflect and shape modern religious sensibilities. Special attention to gender, ethnicity, race, class, nationalism, secularism and mass media. Offered in alternate years. GE credit: ArtHum | AH, WC, S. Miller (new course—eff. spring 15)

10A. Contemporary Ethical Issues (2)
Discussion—1 hour; extensive writing. Prerequisite: Concurrent enrollment in course 10 required; GE topical breadth credit only with concurrent enrollment in course 10. Restricted to students enrolled in course 10. Discussion of the readings assigned for course 10 and completion of a major research paper. May be repeated for credit. GE credit: ArtHum, Div, Wrt | AH, WE, W. (W.) Coudert, Janowitz
(change in existing course—eff. winter 15)

102. Christian Origins (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Development of Christianit y from the end of the first century through the major controversies of the second century. Emphasis on the relationship between the new religious movement and the Roman Empire, and issues of early Christian identity and diversity. GE credit: ArtHum, Div, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

103. Medieval and Byzantine Christianity (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Christianity in Europe and the Near East from the year 600 to 1450. Focus on the development of Catholic and Orthodox traditions in ritual, art, and thought, with attention to interactions between regional groups, and Christian interaction with Islam. GE credit: ArtHum, Div, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

110. Life, Meaning and Identity (4)
Lecture/discussion—3 hours; term paper. Prerequisite: upper division status. Study of religious lives, the quest for meaning and for personal identity; how religions frame the problems of life, how cultural and personal crises affect youthful identity, the nature and structure of dreams, myths and ideals. GE credit: AH, WE, Elmore, Janowitz
(change in existing course—eff. spring 16)

111. Persuasion and Conviction in Religious Tradition (4)
Lecture/discussion—4 hours; term paper. Selected topics in religious argument. Familiarizes students with the discourse structures of religious persuasion and enables them to perform analysis of such texts. Covers argument styles and structures used in ethics, theology, and preaching. GE credit: ArtHum | ACCH, AH, OL, WE, W. F, W, S, Su. Miller, O’Keefe, Syed (new course—eff. spring 15)

115. Mysticism (4)
Lecture—3 hours; term paper. Prerequisite: one lower division Religious Studies course. Historical and descriptive analysis of selected key figures in mystical traditions and related studies of representative mystical texts. Analytic term paper. GE credit: ArtHum, Div, Wrt | AH, OL, VL, WE, W.
(change in existing course—eff. spring 16)

124. Topics in Judaism (4)
Lecture—3 hours; term paper. Prerequisite: course 21, 23. Examination of selected aspects of Jewish life, religion, or literature. Potential topics include: Jewish Perspectives on Jesus; The Golem; History and Legend; Sexuality and Gender in Late Antique Judaism and Early Christianity. May be repeated for credit when topic differs.
(change in existing course—eff. spring 16)

125. Dead Sea Scrolls, Apocalyptic, and Pseudepigrapha (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Survey of the Dead Sea Scrolls, apocalyptic and pseudepigraphical writings of Judaism and Christianity and their historical, social, and religious importance. GE credit: ArtHum, Wrt | AH, WC, WE, Janowitz
(change in existing course—eff. spring 16)

138. Human Rights, Gender, and Sexuality (4)
Lecture/discussion—3 hours; term paper. Gender and sexuality in the context of human rights. Topics include women’s participation in the public sphere, the right to change gender, the right for family privacy, and the right to marriage. (Same course as course 10 and completion of a major research paper. May be repeated for credit. GE credit: ArtHum | AH, WC, WE.
(change in existing course—eff. spring 16)

Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Life and thought of the early Church as reflected by the Synoptic Tradition—Matthew, Mark, Luke and Acts. Offered every third year to alternate with 141B, 141C. GE credit: ArtHum, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

141B. New Testament Literature: John (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Life and thought of the early Church as reflected by the Johannine Tradition; the Gospel and letters of John. Offered every third year to alternate with courses 141A and 141C. GE credit: ArtHum, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

141C. New Testament Literature: Paul (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Life and thought of the early Church as reflected by the Pauline tradition—the letters of Paul. Offered every third year to alternate with 141A, 141B. GE credit: ArtHum, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

143. New Testament Apocrypha (4)
Lecture—3 hours; term paper. Prerequisite: consent of instructor. Extra-canonical Christian writings and their reception, from antiquity to the present. Emphasis on the importance of New Testament figures both as literary characters and as authors within different Christian traditions. GE credit: ArtHum, Div, Wrt | AH, WC, WE.
(change in existing course—eff. spring 16)

154. The Hindu Temple (4)
Lecture—3 hours; term paper. Comparative history of architecture and symbolism of the Hindu Temple in India, Southeast Asia and the United States. Attention to the temple as expression of religious knowledge, political authority, and cultural heritage through the lens of colonialism and postcolonialism. Offered in alternate years. (Same course as Art Hist 154.) GE credit: ArtHum or SocSci | AH or SS, VL, WC, WE. —F, W, S, Su. [F, W, S, Su] Venkatesan (new course—eff. fall 15)

162. Religion and Media in Arab World (4)  Lecture—4 hours. Exploration of the role and experience of media technologies in the Arab world. Study of digital and electronic media as well as alternative media practices. Investigation of new trends in political activism and identity formation. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, WC, WE.—W. Miller  (change in existing course—eff. spring 15)  

163. The Social Life of Islam (4)  Lecture—3 hours; term paper. Prerequisite: course 60 or History 6 recommended. Introduction to culture and social life in Muslim societies. Focus on the plurality of traditions in Muslim faith, reason, and everyday practice. Special attention to Muslim rituals, ethical values, verbal genres, family life, sexuality and veiling, and youth culture. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, WC, WE.—W. Miller  (change in existing course—eff. spring 15)  


194HA. Special Study for Honors Students (1-5)  Independent study. Prerequisite: consent of instructor. Open only to majors of senior standing who qualify for honors program. Guided research, under the direction of a faculty member approved by the Program Director, leading to a senior honors thesis on a religious studies topic. (P/NP grading only)  (change in existing course—eff. summer 15)  

194HB. Special Study for Honors Students (1-5)  Independent study. Prerequisite: consent of instructor. Open only to majors of senior standing who qualify for honors program. Guided research, under the direction of a faculty member approved by the Program Director, leading to a senior honors thesis on a religious studies topic. (P/NP grading only)  (change in existing course—eff. summer 15)  

5. Russian (4)  Discussion—4 hours; laboratory—1 hour. Prerequisite: course 2. Continuation of grammar and language skills developed in course 2. GE credit: ArtHum | AH, OL, WC.—S. (S.)  (change in existing course—eff. spring 15)  

5. Intermediate Russian (4)  Discussion—4 hours; laboratory—1 hour. Prerequisite: course 4. Grammar review. Introduction to literature in its sociopolitical context. Conversational practice. GE credit: ArtHum | AH, OL, WC.—W. (W.)  (change in existing course—eff. spring 15)  

6. Intermediate Russian (4)  Discussion—4 hours; laboratory—1 hour. Prerequisite: course 5. Grammar review. Intermediate conversation and continued reading of literature. Social and cultural practices in contemporary Russia; introduction to Russian history. GE credit: ArtHum | AH, OL, WC.—S. (S.)  (change in existing course—eff. spring 15)  

105. Advanced Russian Conversation (4)  Discussion—3 hours; practice—1 hour. Prerequisite: course 6. Intensive conversation practice and discussion based on current events and contemporary texts. Offered in alternate years. GE credit: ArtHum | AH, OL, WC.—F. Druzhnikov  (change in existing course—eff. winter 15)  

122. 19th-Century Russian Literature (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 101C when the course offered in Russia; no prerequisite when offered in English. Not open to students who have taken course 121 and 127. Study of Russian literature (prose fiction, drama, poetry) from the period between 1800 and the end of the 19th century. May include authors like Pushkin, Lermontov, Gogol, Turgenev, Dostoevsky, Tolstoy, Chekhov. Offered alternately in English or Russian. GE credit: ArtHum, Div | AH, OL, VL, WC, WE.—F, W, S, F, W, S, J. Stochebrukhov  (change in existing course—eff. spring 15)  

124. Twentieth-Century Russian Literature (4)  Discussion—4 hours; term paper. Prerequisite: course 101C when offered in Russian; no prerequisite when offered in English. Study of Russian literature (prose fiction, drama, poetry) from the period between 1900 and the end of the 20th century. Authors like Y. Olesha, M. Bulgakov, D. Kharmas, and L. Petrusheskaia. Taught in Russian. Offered in alternate years. GE credit: ArtHum | AH, OL, VL, WC, WE.—F, W, S, F, W, S, J. Kaminer  (change in existing course—eff. fall 15)  

139. Pushkin (4)  Lecture/discussion—3 hours; term paper. Prerequisite: course 101C or consent of instructor. Three major periods of Pushkin's poetic works: his early Lyceum verse; his poetry of the early 1820s; and the mature period. Further discussion of Pushkin's prose fiction, drama, and journalism. GE credit: ArtHum, Div | AH, OL, WC.—F. (F)  (change in existing course—eff. fall 15)  

141. Tolstoy (in English) (4)  Lecture—4 hours, term paper. Study of Leo Tolstoy's literary evolution and moral quest. Readings include his Confession, a major novel such as War and Peace or Anna Karenina, and representative shorter fiction. Offered irregularly. GE credit: ArtHum, Div, Wrt | AH, OL, WE.—F, W, S, F, W, S, J. Harada  (change in existing course—eff. fall 15)  

Science and Society  

New and changed courses in Science and Society (SAS)  

Lower Division  

1. Critical Inquiry into Contemporary Issues (4)  Lecture/discussion—3 hours; discussion—1 hour. Open to first year and new transfer students only. Contemporary issues, including global population trends, economic and environmental changes, cultural diversity and biodiversity, nutrition and food safety, fiber and textiles, changing consumer cultures. Inquiry processes emphasize ethics, multiple disciplines, and multiple perspectives. GE credit: SciEng or SocSci, Div, Wrt | SE or SS, WE.—F, (F) Caswell-Chen  (change in existing course—eff. winter 15)  

3. Science, Technology and Society (4)  Lecture—4 hours. Impact of developments in science and technology on the individual in society and how economics, politics, culture and values affect technological developments. Not open for credit to students who have completed former course Applied Behavioral Sciences 18. Offered irregularly. GE credit: SciEng or SocSci, Wrt | SE or SS.  (change in existing course—eff. winter 15)  

5. Pathways to Discovery: Science and Society (3)  Lecture/discussion—3 hours. Highlights a current issue and/or controversy found in contemporary society and looks at how this problem impacts and is affected by the physical, social and biological sciences. Course varies with topic offered. May be repeated two times for credit. GE credit: SciEng or SocSci, Wrt | SE or SS.  (change in existing course—eff. fall 14)  

41. Understanding Performance: Appreciation of Modern Theatre, Dance, Film and Performance Art for the Humanities and Sciences (4)  Lecture/discussion—3 hours; laboratory/discussion—1 hour. Relevance of theatre and performance to modern culture, science and society. Approaches to theatre/dance/media/performance art, integrated into Mandeville Centre for the Arts and Theatre and Dance Department programs. (Same course as Dramatic Art 5.) GE credit: ArtHum, Div | AH, DD, OL, VL, WC, WE.—F, W, S, F, W, S, J.  (new course—eff. winter 15)  

70A. Genetic Engineering in Medicine, Agriculture, and Law (5)  Lecture—5 hours. Not open to students who have taken Biological Sciences 1A, Biological Sciences 2A or equivalent, or course 20; concurrent enrollment in Plant Biology 98 required. Historical and scientific study of the impact of genetic engineering in medicine, agriculture, and law, including examination of social, ethical, and legal issues raised. Offered in a distance-learning format. GE credit: SciEng or SocSci | SE or SS, VL.—F, W, S, W, S, J. Harada  (change in existing course—eff. winter 15)  

90F. Food Distribution in a Hungry World (3)  Seminar—2 hours. Class size limited to 15 students. The biological, technological, environmental, and socioeconomic factors related to food distribution systems at local, regional, national, and international levels. The potential for increasing world food supply by reducing losses between harvest and consumption. —F (F)  (change in existing course—eff. winter 15)
Science and Technology Studies

New and changed courses in Science and Technology Studies (STS)

Lower Division

40A. Media History 1, Gutenberg to Oppenheimer (4)
Lecture—3 hours; discussion—1 hour; film viewing—2 hours; extensive writing. History of Media to 1945, with particular focus on how mass media technologies including the printing press, the newspaper, photography, cinema, radio and early computing technology. Analysis of inter-related contexts. (Same course as Cinema & Technocultural Studies 40A.) GE credit: ArtHum or SocSci | AH or SS, OL, VL, WE.—F. (F.)

40B. Media History 2 1945-Present (4)
Lecture—3 hours; discussion—1 hour; film viewing—2 hours; extensive writing. Prerequisite: course 40A. History of media from 1945 to present, with particular focus on the development of the computer, digital network and internet technologies in the context of other media infrastructures like radio, television and satellite networks. Analysis of inter-related cultural/political topics. (Same course as Cinema & Technocultural Studies 204B.) GE credit: ArtHum or SocSci | AH or SS, OL, VL, WE.—F. (F.)

172. Video Games and Culture (4)
Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 1 or Technocultural Studies 1 or English 3 or equivalent. Critical approaches to the study of video games, focusing on formal, historical, and cultural modes of analysis. History of software and hardware in North American and global contexts. Relations of games to society, politics, economics, literature, media, and the arts. (Same course as Cinema & Technocultural Studies 172 and English 172.) GE credit: ArtHum or SocSci | ACGH, AH or SS, VL.

173. Science Fiction (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or equivalent. Literary modes and methods of science fiction. Representative texts, authors, and themes of the genre—e.g., time travel, alternative universes, and utopias. Relations of science fiction to science, philosophy, and culture. (Same course as English 173.) GE credit: ArtHum, Wrt | AH, WE.

Graduate

200. Theories and Methods in Science & Technology Studies (4)
Seminar—3 hours; term paper. Theories and methods of Science & Technology Studies as a field of critical and empirical scholarship, and examination of various contexts in which STS has emerged worldwide. May be repeated one time with consent of instructor.

Sociology

New and changed courses in Sociology (SOC)

Lower Division

100. Origins of Modern Sociological Theory (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. California’s distinctive society and culture; sociological analyses of topical issues concerning diversity, environment, cities. Offered irregularly. GE credit: SocSci | ACGH, DD, SS.

102. Society and Culture of California (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. California’s distinctive society and culture; sociological analyses of topical issues concerning diversity, environment, cities. Offered irregularly. GE credit: SocSci | ACGH, DD, SS.

103. Evaluation Research Methods (4)
Lecture—3 hours; discussion—1 hour; term paper; project. Prerequisite: course 1 or 2 or 3 recommended; course 40A and 40B recommended. Surveys applications of research methods to the evaluation of social programs, primarily emphasizing methodological issues, e.g., research design and data collection; uses of evaluation research are also discussed and placed in theoretical context. Participation in an evaluation project. Offered irregularly. GE credit: SocSci | JS, SS.

106. Intermediate Social Statistics (5)
Lecture—4 hours; discussion—1 hour. Prerequisite: course 40A or consent of instructor. Intermediate level course in statistical analysis of social data, emphasizing the logic and use of statistical measures, procedures, and mathematical models especially relevant to sociological analysis. GE credit: SocSci | QL, SL, SS.

120. Deviance (4)
Lecture—3 hours; term paper or discussion. Prerequisite: course 1, 2, or 3 recommended. Social structural sources, institutional practices and microprocesses associated with illegality, evil, disease, immorality, deviance and social processes, and the body. Special emphasis

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div—Domestic Diversity; Wrt—Writing Experience

Quarter Offered: F=Fall; W=Winter, S=Spring, Su=Summer; 2015-2016 offering in parentheses
124. Education and Inequality in the U.S. (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Functions of schooling in contemporary U.S. society. Racial, ethnic, social class, and gender inequalities in student outcomes. Consideration of classic and current controversies in the sociology of education and education policy. GE credit: SocSci | SS.

125. Sociology of Culture (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 1, 2, or 3 recommended. Sociological approaches to the study of historical and contemporary culture and mass media, and their structuring in relation to social actors, institutions, stratification, power, the production of culture, audiences, and the significance of culture in processes of change. GE credit: SocSci | SS.

126. Social Interaction (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Every-day interaction in natural settings; ethnographic project. P
Lecture—3 hours; discussion—1 hour; term paper; America (4)

127. Interpersonal Dynamics (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Analy-sis of the influences of cultural differences and racial stratification on interpersonal interaction in instru-mental and expressive contexts; marriage, family, friendship, social networks. GE credit: SocSci, Wrt | SS.

129. Sociology of Black Experience in America (4)
Lecture—3 hours; discussion—1 hour; term paper; project. Prerequisite: course 1, 2, or 3 recommended. Survey of historical and contemporary the-oretical sociological perspectives on the Black experience in United States. Emphasis on compar-isons of Black sociological perspectives and mainstream perspectives of specific sociologists. GE credit: SocSci, Div | DD, AD, AC, GH, DD, SS.

130. Race Relations (4)
Lecture—3 hours; term paper or discussion—1 hour. Functions of the social definitions of race and racial groups. Analysis of racial conflict, oppression, and other forms of ethnic stratification. Models of ethnic interaction and social change. Emphasis on racial relationships within the U.S. GE credit: SocSci, Div | AC, GH, DD, SS.

131. The Family (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Contemporary fam-ily life in historical and cross-cultural perspective. How different family forms arose, their significance today and prospects for future family change. Atten-tion to power relations within and beyond the family and to the social implications of family transforma-tion. GE credit: SocSci, Div | Wrt | AC, GH, DD, SS.

132. The Sociology of Gender (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Analysis of bio-logi-cal, psychological, cultural and structural conditions underlying the status and roles of men and women in contemporary society, drawing on a historical and comparative perspective. GE credit: SocSci, Div | AC, GH, DD, SS.

133. Sexual Stratification and Politics (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended; consent of instruc-tor. Analysis of origins, dynamics, and social impli-cations of sexual stratification. Examination of classical and contemporary theorists such as Engels, Freud, J.S. Mill, de Beauvoir, Juliet Mitchell, D. Din-nerstein. Attention to selected issues in social move-ments for and against women. Offered irregularly. GE credit: SocSci, Div | SS.

134. Sociology of Racial Ethnic Families (4)
Lecture—3 hours; discussion—1 hour or term paper. Prerequisite: course 1, 2, or 3 recommended. Asian American, Black, Chicano, and Native American family life in comparative historical perspective. Family structure and gender roles are considered in relation to socio-historical dynamics. Offered irregu-larly. GE credit: SocSci, Wrt | AC, GH, DD, SS.

135. Social Relationships (4)
Lecture—3 hours; discussion—1 hour or term paper. Prerequisite: course 1, 2, or 3 recommended. Social and cultural factors influencing friendships and inti-mate relationships. Topics include relationship devel-opment, relationship maintenance, and relationship loss. GE credit: Div, SocSci, Wrt | SS.

137. African American Society and Culture 1790-1990 (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Restricted to upper division standing. Political and social transformations of African American communi-ties between 1790 and 1990, as seen through film, literature, and music. Topics include: Black con-sciousness, Afro-Slave culture, The Harlem Renais-sance, and contemporary Hip Hop. Offered irregularly. GE credit: SocSci, Div | AC, GH, DD, SS.

138. Economic Sociology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1, 2, or 3 recommended. Overview of the rapidly growing field of economic sociology. Focus on variations in the ways that markets are orga-nized. The argument that economic and collective rationality will also be emphasized. GE credit: SocSci | AC, GH, SS, WC.

140. Sociology of Religion (4)
Lecture—3 hours; discussion—1 hour or term paper or research project. Relationship between social structures and religions. The social setting of the major world religions. Religious innovators and institu-tionalization (churches, sects, cults). Secularization in the modern world and the rise of secular ideolo-gies. Offered in alternate years. GE credit: SocSci, Div | Wrt | SS.

142. Change in existing course—eff. fall 16

143. Social Policy (4)
Lecture—3 hours; discussion—1 hour or term paper or project (instructor’s option). Analysis of several aspects of social movements: mobilization, forms of organization, ideology, recruitment, leadership, strategies and tactics, development, effects. Frequent use of sound and film materials. GE credit: SocSci | SS.

144. Health and Illness (4)
Lecture—3 hours; term paper or discussion—1 hour; project. Theoretical tools for understanding the social determinants of health and health care, includ-ing such topics as health policy, social sources of ill-ness, social construction of illness, medicalization, social disparities in health, and the illness experi-ence. GE credit: SocSci | SS.

146. Sociology of Childhood (4)
Lecture—3 hours; term paper. Prerequisite: upper division standing. Contemporary childhood in histor-ical, cross-cultural, and global perspectives. Examine changes in understanding of the nature of childhood and “best interests of the child” by class, race, gen-der, geographic region, and historical period. GE credit: SocSci | AC, GH, DD, SS, WC.

148. Sociology of Religion (4)
Lecture—3 hours; discussion—1 hour or term paper or research project. Relationship between social structures and religions. The social setting of the major world religions. Religious innovators and institu-tionalization (churches, sects, cults). Secularization in the modern world and the rise of secular ideolo-gies. Offered in alternate years. GE credit: SocSci, Div | Wrt | SS.

149. Work, Employment, and Careers in the 21st Century (4)
Lecture—3 hours; term paper or discussion—1 hour. Pass One open to upper division majors and gradu-ate students. Historical and contemporary overview of employment, work, and occupations in American society. Study of authority and power relations, labor markets, control systems, stratification, and corporate structures, and how these factors shape work in diverse or organizational and employment setting. GE credit: SocSci | SS.

156. Social Movements (4)
Lecture—3 hours; discussion—1 hour or term paper or project (instructor’s option). Analysis of several aspects of social movements: mobilization, forms of organization, ideology, recruitment, leadership, strategies and tactics, development, effects. Frequent use of sound and film materials. GE credit: SocSci | SS.

159. Comparative Organizations (4)
Lecture/discussion—3 hours; term paper. Prerequi-site: course 180A or 180B, or permission of instructor. Examination of the economic, cultural, and political organization of major industrial and developing nations. Discussion of patterns and practices, alter-native theoretical models of explanation, and case studies of organizations. Societies may include Japan, Germany, Egypt, China, and the U.S. Offered in alternate years. GE credit: SocSci | AC, GH, SS, WC.

162. Utopian Communal Groups and Movements (4)
Lecture—3 hours; term paper or discussion—1 hour. Pass One open to upper division majors and gradu-ate students. Historical and contemporary overview of employment, work, and occupations in American society. Study of authority and power relations, labor markets, control systems, stratification, and corporate structures, and how these factors shape work in diverse or organizational and employment setting. GE credit: SocSci | SS.

185. Social Policy (4)
Lecture—3 hours; term paper or discussion—1 hour. Pass One open to upper division majors and gradu-ate students. Examination of social policies that affect the well-being of individuals, families and groups, including such policies as old-age pensions, health insurance, and aid to the poor. Students may not take both course 185 and 185Y for credit. GE credit: SocSci | SS.

Pre-Fall 2011 General Education (GE): AH-|Arts and Humanities; SC-|Science and Engineering; SocSci-|Social Sciences; Div-|Domestic Diversity; Wrt-|Writing Experience
188. Markets, Culture and Inequality in China (4)
Lecture—3 hours; term paper. Prerequisite: upper division standing. Pass One restricted to Sociology (LSOR and LSOC) majors and Sociology graduate students. Same as Political Science 188. Emphasis on economic and political systems and patterns of social interaction and inequality in China. State and corporate structures and practices, market and consumer behaviors, social mobility and stratification, protest and resistance. Offered in alternate years. GE credit: SocSci | SS, WE. —F. (in alternate years) (change in existing course—eff. winter 15)

190X. Seminar in Sociological Analysis (4)
Seminar—3 hours; term paper. Prerequisite: upper division standing; course 100 (former course 165A). Limited enrollment. In-depth examination at an advanced division level of a special topic in Sociology. Emphasis on student participation in learning. May not be repeated for credit. Offered irregularly. —F. (change in existing course—eff. winter 15)

191. Workshop in Contemporary Sociological Theory (4)
Lecture—2 hours; workshop—1 hour; term paper. Prerequisite: course 100 (former 165A); senior standing. Workshop in contemporary sociological theory that allows students to explore the uses of theory in empirical inquiry on problems of interest to students. Contemporary theory considered in relation to classical and modern influences, concept formation, theory construction, and explanation. Not open for credit to students who have received credit for course 165B. Offered irregularly. GE credit: SocSci | SS. —F. (change in existing course—eff. winter 15)

192. Internship and Research Practicum (2-6)
Internship—6-18 hours. Prerequisite: course 46A; upper division standing; approval of proposed internship and consent of instructor. Supervised internship and study in an agency, organization, or institution; application of sociological concepts to the work experience. Maximum of four units may be counted toward the major. May be repeated for credit with consent of instructor. (P/NP grading only)—F, W, S, (F, W, S) —S. (S.) Dahlgren, O’Geen, Southard (change in existing course—eff. winter 15)

194H. Special Study for Honors Students (1-5)
Prerequisite: consent of instructor. Open to Sociology majors of senior standing who qualify for the Honors program. Independent study of a sociological problem involving the writing of an Honors thesis. May be repeated up to eight units for credit. (P/NP grading only; deferred grading only, pending completion of sequence) GE credit: WE—F, W. (F, W) —F. (change in existing course—eff. fall 15)

194HA. Special Studies for Honors Students (4)
Independent study—12 hours. Prerequisite: senior qualifying for honors. Directed reading, research and writing, culminating in the completion of a senior honors thesis or project under direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SciEng | SE—F, F. (change in existing course—eff. summer 15)

194HB. Special Studies for Honors Students (4)
Independent study—12 hours. Prerequisite: senior qualifying for honors. Directed reading, research and writing, culminating in the completion of a senior honors thesis or project under direction of a faculty adviser. (Deferred grading only, pending completion of sequence.) GE credit: SciEng | SE—W, W. (W) —W. (W) —W. (W) (change in existing course—eff. summer 15)

Graduate

201. Social Research (4)
Lecture/discussion—3 hours; term paper. Prerequisite: graduate standing or consent of instructor. Comparative survey of sociological inquiry, taught as a pre-advanced level. Social Research: values and research; research agendas and research problem formulations; research process; explanations, interpretation; study design; concept and theory construction causality and interpretation, and explanation. Not open to undergraduate students. May be repeated eight times for credit. Offered irregularly. —F. (change in existing course—eff. fall 15)

207A. Methods of Quantitative Research (4)
Lecture—3 hours; term paper. Prerequisite: course 100 or the equivalent. Principles of study design, examination of measurement, survey research methods and multivariate analysis. Course will stress actual practice of techniques. Students will carry out quantitative data analysis using packaged computer programs. May be repeated eight times for credit with instructor approval. —F. (F) —F. (F) (change in existing course—eff. fall 15)

242A. Methodologies of Sociohistorical Inquiries (4)
Seminar—3 hours; term paper. Prerequisite: consent of instructor not required. Graduate students in the Social Sciences Division or the Humanities, Arts, and Cultural Studies Division required for undergraduates and students from other divisions or colleges. Introduction to comparative and case methodological approaches to sociohistorical inquiry, theoretical and practical issues, and substantive research agendas ranging from study of large-scale social transformations to close microhistories, including research agendas being developed by students in the course. —F. (F) —F. (F) —F. (F) (change in existing course—eff. fall 15)

288. Integrative Research Practicum (4)
Seminar—6 hours; extensive writing; term paper. Prerequisite: courses 207A, 242A, 292A; consent of instructor. Continuing training in field, quantitative, and/or comparative methodological techniques. Emphasis on students’ research projects and applications of research methods. May be repeated for credit; consent of instructor. —F. (F) —F. (F) —F. (F) (change in existing course—eff. fall 15)

292A. Field Research (4)
Seminar—3 hours; fieldwork. Prerequisite: graduate standing in Sociology or consent of instructor. Introduction to the major methods, and practices of field research, with particular emphasis on the ethno- graphic tradition of participant observation. Interpreting and evaluating qualitative techniques will also be covered. Students will develop original research projects based on their own fieldwork. —F. (F) —F. (F) —F. (F) (change in existing course—eff. fall 15)

Soil Science

New and changed courses in Soil Science (SSC)

Lower Division

10. Soils in Our Environment (3)
Lecture—3 hours; independent study. Class size limited to a maximum of 10 students. Soils in our global ecosystem; soils as natural bodies formed by interactive environmental processes; soil response to use and management; sustainable use of soil resources; role of soils in agricultural and environmental issues; role of soils in our daily lives. GE credit: SciEng | QL, SE, SL—F. (F) Dahlgren (change in existing course—eff. winter 15)

Upper Division

105. Field Studies of Soils in California Ecosystems (5)
Prerequisite: courses 100 and 120, or equivalent recommended. Class size limited to a maximum of 24 students. Field-based studies of soils in California ecosystems, away from campus, throughout California. Emphasis on description and classification of soils, relationships among soils, vegetation, geology, and human activity; soil survey, physical, chemical, and biological processes in soils on the landscape; and the role of soils in land use. May be repeated once per year. GE credit: SciEng | QL, SE, SL, WE—Su. (Su.) Amundson, Dahlgren, O’Geen, Southard (change in existing course—eff. winter 15)

112. Soil Ecology (3)
(canceled course—eff. winter 14)

118. Soils in Land Use and the Environment (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 100 or consent of instructor. Soils are considered as elements in land use planning and environmental quality. Topics include: soil survey reports, remote sensing, land capability classification, soil erosion/conservation, waste disposal on soils and soil reclamation. One one-day field trip. GE credit: SciEng | SL—S. (S.) O’Geen, Southard (change in existing course—eff. spring 15)

Graduate

202. Topics in Advanced Soil Chemistry (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: undergraduate course in soil chemistry or consent of the instructor. Restricted to 18 students. Reviews of current research in soil chemistry. Topics include double layer theory; clay mineral and oxide surface chemistry; adsorption on soil surfaces; speciation and modeling of solution ions; solubility and mineral stability diagrams. May be repeated one time for credit if topic differs. —W. (W) Parikh (change in existing course—eff. winter 16)

205. Field Studies of Soils in California Ecosystems (5)
Fieldwork—50 hours; discussion—15 hours; lecture—5 hours. Prerequisite: courses 100 and 120 or equivalent recommended. Class size limited to 24 students. Field-based soil studies in California ecosystems. Description and classification of soils; relationships among soils, vegetation, geology, and climate; physical, chemical, and biological processes; their role in land use. Similar to course 105; requires additional work for graduate credit. May be repeated one time for credit if geographic locale changes. Offered irregularly. —Su. (Su.) Amundson, Dahlgren, O’Geen, Southard (change in existing course—eff. winter 15)
208. Soil-Plant Interrelationships (3)
Lecture—3 hours. Prerequisite: course 100, Plant Biology course 211 or consent of instructor. Plant needs, occurrence and reactions of water and mineral nutrients in soils; root systems and their growth in soils; mass flow and diffusion mechanisms in nutrient acquisition, models relating nutrient uptake to soil and plant characteristics, nutrient assimilation and crop quality. Offered in alternate years. —(W) Richards
(change in existing course—eff. spring 15)

209. Physiology and Ecology of Mycorrhizal Symbioses (3)
(canceled course—eff. winter 14)

216. Physical Geochemistry (3)
(canceled course—eff. winter 14)

218. Soil Erosion and Conservation (3)
(canceled course—eff. winter 14)

3V. Elementary Spanish (5)
Web virtual lecture—3 hours; web electronic discussion—2 hours. Prerequisite: course 2, 2S, 2V, or 2Y. Continuation of course 2, 2S, 2V or 2Y. Online format combining synchronous chatting with technologically based materials. Not open to students who have taken equivalent course 3, 3S, 3Y, or higher. GE credit: ArtHum | AH, WC, WE—F, W, Su. (F, W, S.) Blake
(change in existing course—eff. winter 16)

3Y. Elementary Spanish (5)
Lecture/discussion—3 hours; web electronic discussion—2 hours. Prerequisite: course 2, 2S, 2V or 2Y. Completion of grammatical sequence and continuing practice of all language skills using cultural texts. Hybrid format combining classroom instruction with technologically based materials. Not open to students who have taken equivalent course 3, 3S, 3Y, or higher. GE credit: ArtHum | AH, WC—F, W, S. (F, W, S.) Blake
(change in existing course—eff. winter 16)

Spanish

New and changed courses in Spanish (SPA)

Lower Division
1. Elementary Spanish (5)
Lecture/discussion—5 hours. Introduction to Spanish grammar and development of all language skills in a cultural context with special emphasis on communication. Not open for credit for students who have completed equivalent course 1. Students who have successfully completed Spanish 2 or 3 in the 10th or higher grade of high school may receive unit credit for this course on a P/NP grading basis only. Although a passing grade will be charged to the student’s P/NP option, no petition is required. All other students will receive a letter grade unless a P/NP petition is filed. GE credit: ArtHum | AH, WC—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 16)

2. Elementary Spanish (5)
Lecture/discussion—5 hours. Prerequisite: course 1 or 1S or the equivalent. Continuation of courses 1 and 1S in the areas of grammar and basic language skills. Not open for credit for students who have completed equivalent course 2S, 2V or 2Y. GE credit: ArtHum | AH, WC—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 16)

2V. Elementary Spanish (5)
Web virtual lecture—3 hours; web electronic discussion—2 hours. Prerequisite: course 1, 1S, or previous high school Spanish language experience. Continuation of course 1, 1S, or previous high school experience in the areas of grammar and basic language skills. Online format combining synchronous chatting with technologically based materials. Not open for credit to students who have taken equivalent course 2, 2S, 2Y, or higher. GE credit: ArtHum | AH, WC—F, W, S, Su. (F, W, S, Su.) Blake
(change in existing course—eff. winter 16)

2Y. Elementary Spanish (5)
Lecture/discussion—3 hours; web electronic discussion—2 hours. Prerequisite: course 1 or 1S. Continuation of course 1 or 1S in the areas of grammar and basic language skills. Hybrid format combining classroom instruction with technologically based materials. Not open for credit to students who have taken equivalent course 2, 2S, or 2V. GE credit: ArtHum | AH, WC—F, W, S, Su. (F, W, S, Su.)
(change in existing course—eff. winter 16)

3. Elementary Spanish (5)
Web virtual lecture—3 hours; web electronic discussion—2 hours. Prerequisite: course 2, 2S, 2V, or 2Y. Continuation of course 2, 2S, 2V or 2Y. Online format combining synchronous chatting with technologically based materials. Not open to students who have taken equivalent course 3, 3S, 3Y, or higher. GE credit: ArtHum | AH, WC—F, W, Su. (W, Su.)
Blake
(change in existing course—eff. winter 16)

8. Elementary Spanish Conversation (2)
Discussion—3 hours. Prerequisite: course 3; course 21 (concurrently) recommended. Not open to native speakers or upper division students. Designed to develop oral communication skills. Emphasis on increasing vocabulary, improving listening comprehension, pronunciation, accuracy and grammar control. Practice of all language skills through reading of modern texts, presentation/discussion of major ideas, vocabulary expansion, and writing essays on topics discussed. Designed for students whose native language is Spanish. GE credit: ArtHum | AH, WC, WE—F, W. (W.)
(change in existing course—eff. winter 16)

11N. The Structure of Spanish: Sounds and Words (3)
Lecture—3 hours. Prerequisite: Linguistics 1; course 22, 22S, 22V or 22Y. Development of writing skills by way of reading, discussion, and analysis of authentic materials, literary texts, and videos. Selective review of grammar. Composition, journals, individual and group projects. Course is taught in a Spanish speaking country. Not open for credit to students who have completed equivalent course 23. GE credit: ArtHum | AH, WC, WE—F, W, S. (F, W, S, Su.) Colombi
(change in existing course—eff. winter 16)

23. Spanish Composition I (4)
Lecture—3 hours; extensive writing. Prerequisite: course 22, 22S, 22V or 22Y. Development of writing skills by way of reading, discussion, and analysis of authentic materials, literary texts, and videos. Selective review of grammar. Composition, journals, individual and group projects. Designed for students interested in teaching Spanish to native speakers. Not open to native speakers or upper division students. GE credit: ArtHum | AH, WC, WE—F, W, S. (F, W, S, Su.) Blake
(change in existing course—eff. winter 16)

24. Spanish Composition II (4)
Lecture—3 hours; extensive writing. Prerequisite: course 23 or 23S. Development of advanced level writing skills, with emphasis on how to write argumentative prose, essays, and research papers. Introduction to the analysis of literary genres. Compositions, journals, individual and group projects. Not open for credit to students who have completed equivalent course 24S. GE credit: ArtHum | AH, WC, WE—F, W, S, Su. (F, W, S, Su.) Blake
(change in existing course—eff. winter 16)

24S. Spanish Composition III (4)
Lecture—3 hours; extensive writing. Prerequisite: course 24 or 24S. Development of advanced level writing skills, with emphasis on how to write argumentative prose, essays, and research papers. Introduction to the analysis of literary genres. Compositions, journals, individual and group projects. Not open for credit to students who have completed equivalent course 24S. GE credit: ArtHum | AH, WC, WE—F, W, S. Colombi
(change in existing course—eff. winter 16)

31. Intermediate Spanish for Native Speakers I (5)
Lecture/discussion—3 hours; tutorial—1 hour; extensive writing. Prerequisite: course 3 or the equivalent or consent of instructor. First course of a three-quarter series designed to provide bilingual students whose native language is Spanish with the linguistic and learning skills required for successfully completing upper division courses in Spanish. Intensive review of grammar and composition. GE credit: ArtHum | AH, OL, WC, WE—F, W. (F)
(change in existing course—eff. winter 16)

32. Intermediate Spanish for Native Speakers II (5)
Lecture/discussion—3 hours; tutorial—1 hour; extensive writing. Prerequisite: course 3; consent of instructor. Continuation of Spanish 31, intensive review of grammar and composition. Development of all language skills through reading of modern texts, presentation/discussion of major ideas, vocabulary expansion, and writing essays on topics discussed. Designed for students whose native language is Spanish. GE credit: ArtHum | AH, OL, WC, WE—F, W. (W.)
(change in existing course—eff. winter 16)

33. Intermediate Spanish for Native Speakers III (5)
Lecture/discussion—3 hours; tutorial—1 hour; extensive writing. Prerequisite: course 3; consent of instructor. Development of all language skills through reading of modern texts, presentation/discussion of major ideas, vocabulary expansion, and writing essays on topics discussed. Designed for students whose native language is Spanish. GE credit: ArtHum | AH, OL, WC, WE—F, W. (W.)
(change in existing course—eff. winter 16)

Upper Division

111N. The Structure of Spanish: Sounds and Words (3)
Lecture—3 hours. Prerequisite: Linguistics 1; course 22, 22S, 22V or 22Y. Development of writing skills by way of reading, discussion, and analysis of authentic materials, literary texts, and videos. Selective review of grammar. Composition, journals, individual and group projects. Designed for students whose native language is Spanish. GE credit: SocSci | SS—F, W, S. (F, W, S.)
(change in existing course—eff. spring 15)

117. Teaching Spanish as a Native Tongue in the U.S.: Praxis and Theory (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: Linguistics 1; course 24, 24S or consent of instructor. Designed for students interested in teaching Spanish to native speakers. Focus on cultural diversity of the Spanish speaking population in the United States; applied language teaching methodologies in the context of teaching Spanish to native speakers at different levels. Offered in alternate years. GE credit: OL—F, W, S. Colombi
(change in existing course—eff. spring 15)

123. Creative Writing in Spanish (4)
Discussion—4 hours. Prerequisite: course 24 or 33 or consent of instructor. Intensive writing of poetry or fiction in Spanish or in a bilingual (Spanish/English)
format. Students will write both in prescribed forms and in experimental forms of their own choosing. Offered in alternate years. GE credit: WE—(S.) Alarcón (change in existing course—eff. spring 15)

132. Golden Age Drama and Performance (4)
Lecture—1.5 hours; performance instruction—1.5 hours. Prerequisite: course 100, 100S, 141, 141S, 170 or 170S. Limited enrollment. Golden Age drama: text and performance. Study of Spanish Baroque drama as performance art. Close reading of plays and related aspects of seventeenth-century theater: theatrical spaces, staging, performance, actors, public, language, costumes. Final project is performance of a play. May be repeated two times for credit. Offered in alternate years. GE credit: ArtHum | AH, OL, VL, WE—II; Ill, III, Martin (change in existing course—eff. winter 15)

159. Special Topics in Latin American Literature and Culture (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: any one of the following: course 100, 100S, 141, 141S, 170 or 170S. Special topics in the literature and culture of Latin America. May be repeated one time for credit when topic or subject differs; students may take any SPA 159 course two times total in combination. GE credit: ArtHum | AH, OL, VL, WE—F, W, S. F, S. Bejel, Benucci, Egan, Irwin, Pelullo, Lazzara (change in existing course—eff. winter 15)

159S. Special Topics in Latin American Literature and Culture (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: any one of the following: course 100, 100S, 141, 141S, 170 or 170S. Special topics in the study of Latin American literature and culture. Offered in a Spanish speaking country under the supervision of UC Davis faculty. May be repeated one time for credit when topic or subject differs; students may take any SPA 159 course two times total in combination. GE credit: ArtHum | AH, WC—F, W, S. F, S.) Lazzara, Pelullo (change in existing course—eff. winter 15)

171S. Music from Latin America (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Examination of music from Latin America. Changes in music (e.g. tango, bossa nova, salsa, musica tomena, musica andin) as well as its implications in other musical genres. Taught in Spanish or in the language of the speaking country under the supervision of UC Davis faculty. Not open to students who have taken course 171 or Music 127. GE credit: ArtHum | AH, WC—W, W. (new course—eff. winter 15)

178A. Spanish for the Professions (4)
Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 224, 245S or 33. For students with an advanced level of Spanish interested in the use of Spanish in the health care, legal and law enforcement and marketing and business professions. Field trips documenting the use of Spanish in the public concerts, GE credit: ArtHum or SocSci | AH or SS, DD, OL, WE—F, W, S, F, W, S.) Colonbi (new course—eff. fall 14)

Lecture—3 hours; term paper or discussion—1 hour. Interaction between the interpretations of scientific ideas, philosophical issues, and politics concerning the human body in the Spanish-speaking world through different historical periods. Not open to students who have taken equivalent course 179Y. GE credit: ArtHum or SciEng or SocSci | AH or SE or SS—F, W, S, F, W, S.) Bejel, Slater (new course—eff. fall 15)

179Y. Science and Politics of the Human Body in the Spanish-Speaking World (4)
Web virtual session—2 hours. Interaction between the interpretations of scientific ideas, philosophical issues, and politics concerning the human body in the Spanish-speaking world through different historical periods. Not open to students who have taken equivalent course 179G. GE credit: ArtHum or SciEng or SocSci | AH or SE or SS—F, W, S, F, W, S.) Bejel, Slater (new course—eff. fall 15)

180. Senior Seminar in Spanish Linguistics (4)
Seminar—3 hours; term paper. Prerequisite: senior standing; a major in Spanish or consent of instructor. Offered in alternate years. GE credit: ArtHum or SocSci | AH or SS, OL, WE—F, W, S. F, W, S.) Blake, Bradley, Colombi (change in existing course—eff. winter 15)

181. Senior Seminar in Spanish Literature/Culture (4)
Seminar—3 hours; term paper—1 hour. Prerequisite: senior standing, a major in Spanish or consent of instructor. Offered in alternate years. GE credit: ArtHum | AH, OL, WE—W (W.) Altisent, González, Martin, Martínez-Carazo (change in existing course—eff. winter 15)

182. Senior Seminar in Latin American Literature/Culture (4)
Seminar—3 hours; term paper—1 hour. Prerequisite: senior standing, a major in Spanish or consent of instructor. Offered in alternate years. GE credit: ArtHum | AH, OL, WE—W, S. (S.) Bejel, Egan, Irwin, Lazzara, Pelullo (change in existing course—eff. winter 15)

1921. Internship in Spanish (1-12)
Independent study—3-36 hours. Prerequisite: course 23; junior standing; major in Spanish, Chicano Studies, or a related field; consent of instructor. Internships in fields where Spanish language skills can be used and perfected (teaching, counseling, translating, interpreting). May be repeated up to 8 units for credit. Units will not count toward the Spanish major. (P/NP grading only.) (change in existing course—eff. spring 15)

Graduate
211. Hispanic Dialectology (4)
Seminar—3 hours; term paper. Prerequisite: course 220 or consent of instructor. Comparative and historiographical study of the distinctive features of Peninsular and American Spanish dialects. (Former course 221.)—S. (S.) (change in existing course—eff. spring 15)

220. Catalan Language and Culture (4)
Lecture/discussion—3 hours; laboratory—1 hour. Prerequisites: good command of Catalan, knowledge of Spanish, Portuguese, French or Italian and graduate level of studies in any of these languages; consent of instructor. Open to advanced undergraduate students, with notions of Catalan, can be admitted with consent of instructor; designed for graduate students. Foundation for the acquisition of Catalan oral, reading and elementary writing level skills for students of Spanish (Iberianists or Hispanists) who have the capacity to interpret educated written language. Emphasis on weekly exposure to grammar and all language skills. Offered irregularly. F—Altisent (change in existing course—eff. winter 15)

231. Mathematical Statistics: Brief Course (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Mathematics 168. Basic probability, densities and distributions, mean, variance, covariance, Chebyshev's inequality, some special distributions, sampling distributions, central limit theorem and law of large numbers, point estimation, some methods of estimation, interval estimation, confidence intervals

Statistics

New and changed courses in Statistics (STA)

Lower Division

32. Introductory Statistical Analysis Through Computers (4)
Lecture—3 hours; laboratory—1 hour. Prerequisite: Mathematics 168 or the equivalent. Descriptive statistics, probability, sampling distributions, estimation, hypothesis testing, contingency tables, ANOVA, regression, implementation of statistical methods using computer package. Only two units credit allowed to students who have taken course 13, 102; not open for credit to students who have taken course 102. GE credit: SciEng | QL, SE—W, S, S. (S.) (change in existing course—eff. fall 14)

101. Advanced Applied Statistics for the Biological Sciences (4)
Lecture—3 hours; laboratory—1 hour. Prerequisite: course 100. Basic experimental designs, two-factor ANOVA without interactions, repeated measures ANOVA, ANCOVA, random effects, multiple regression, basic model building, resampling methods, multiple comparisons, multivariate methods, generalized linear models, Monte Carlo simulations. GE credit: SciEng | QL, SE—F, W, S. F, W, S.) (change in existing course—eff. winter 15)

101A. Mathematical Statistics: Analysis of Variance (4)
Lecture—3 hours; discussion/lab—1 hour. Prerequisite: course 13 or 32 or 100 or 102 or 103. Basics of experimental design. One-way and two-way fixed effects, analysis of variance models. Randomized complete and incomplete block design. Multiple comparisons procedures. One-way random effects model. GE credit: SciEng | SE—F, W, F, W, S.) (new course—eff. fall 14)

130A. Mathematical Statistics: Brief Course (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Mathematics 168. Basic probability, densities and distributions, mean, variance, covariance, Chebyshev's inequality, some special distributions, sampling distributions, central limit theorem and law of large numbers, point estimation, some methods of estimation, interval estimation, confidence intervals
for certain quantities, computing sample sizes. Only 2 units of credit allowed to students who have taken course 131A. GE credit: SciEng | QL, SE — F, F. (F)
[change in existing course—eff. spring 15]

131B. Introduction to Mathematical Statistics (4)
Lecture—3 hours; discussion —1 hour. Prerequisite: course 131A or consent of the instructor. Sampling, methods of estimation, sampling distributions, confidence intervals, testing hypotheses, linear regression, analysis of variance, elements of large sample theory and nonparametric inference. GE credit: SciEng | QL, SE — W, S. [W, S]
[change in existing course—eff. spring 15]

131C. Introduction to Mathematical Statistics (4)
Lecture—3 hours; discussion —1 hour. Prerequisite: course 131B or consent of the instructor. Sampling, methods of estimation, sampling distributions, confidence intervals, testing hypotheses, linear regression, analysis, correlated errors; regression with correlated errors; autoregressive models; autoregressive seasonality, correlated errors; regression with correlated errors. Time series analysis and applications. Models for experimental data, measures of dependence, large-sample theory, statistical estimation and inference. Univariate and multivariate spectral analysis, ARIMA models, state-space models, Kalman filtering. Offered in alternate years. — (W)
[change in existing course—eff. spring 15]

133. Mathematical Statistics for Economists (4)
Lecture—3 hours; discussion —1 hour. Prerequisite: course 130A and Mathematics 168B, or the equivalents. Probability, basic properties; discrete and continuous random variables (binomial, normal, t, chi-square); expectation and variance of a random variable; bivariate random variables (bivariate normal); sampling distributions; central limit theorem; estimation, maximum likelihood principle; basics of hypothesis testing (one-sample). No credit for students majoring in Statistics. GE credit: SciEng | QL, SE — F, F. (F)
[change in existing course—eff. spring 15]

137. Applied Time Series Analysis (4)
Lecture—3 hours; laboratory —1 hour. Prerequisite: course 108 or its equivalent; familiarity with calculus or matrix algebra recommended. Time series relationships; univariate time series models: trend, seasonal, and auto-regressive moving average models; spectral analysis: cyclical behavior and periodicity, measures of periodicity, periodograms, and linear filtering; prediction of time series; transfer function models. GE credit: SciEng | QL, SE — W, W. [W]
[change in existing course—eff. fall 14]

142. Reliability (4)
Lecture—3 hours; discussion/laboratory —1 hour. Prerequisite: course 130B or 131B or consent of instructor. Stochastic modeling and inference for reliability systems. Topics include coherent systems, statistical failure models, notions of aging, maintenance policies and their optimization. Offered in alternate years. GE credit SciEng | QL, SE
[change in existing course—eff. spring 15]

Graduate
205. Statistical Methods for Research with SAS (4)
Lecture—3 hours; laboratory —1 hour. Prerequisite: introductory upper division statistics course and some knowledge of vectors and matrices; courses 100, or 102, or 103 suggested or the equivalent. Focus on linear statistical models widely used in scientific research. Emphasis on concepts, methods and data analysis using SAS. Topics include simple and multiple linear regression, polynomial regression, diagnostic techniques, model selection, variable transformation, factorial designs and ANCOVA. — S, S.
[change in existing course—eff. spring 15]

225. Clinical Trials (4)
Lecture—3 hours; discussion/laboratory —1 hour. Prerequisite: consent of instructor. Basic statistical principles of clinical designs, including bias, randomization, blocking, and masking. Practical applications of widely-used designs, including factorial designs and cluster randomization designs. Advanced statistical procedures for analysis of data collected in clinical trials. (Same course as Biostatistics 225.) Offered in alternate years. — (W)
[change in existing course—eff. spring 15]

226. Statistical Methods for Bioinformatics (4)
Lecture—3 hours; discussion/laboratory —1 hour. Prerequisite: course 131C or consent of instructor; data analysis experience recommended. Standard and advanced statistical methodology, theory, algorithms, and applications relevant to the analysis of omics data. (Same course as Biostatistics 226.) Offered in alternate years. — W.
[change in existing course—eff. spring 15]

231A. Mathematical Statistics I (4)
Lecture—3 hours; discussion —1 hour. Prerequisite: courses 131A and 131B or consent of instructor. Measure-theoretic foundations, abstract integration, independence, laws of large numbers, characteristic functions, central limit theorems. Weak convergence in metric spaces, Brownian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. (Same course as Mathematics 231A.) — F, F.
[change in existing course—eff. spring 15]

235B. Probability Theory (4)
Lecture—3 hours; term paper or discussion —1 hour. Prerequisite: Mathematics 125B and 135A or course 131A or consent of instructor. Measure-theoretic foundations, abstract integration, independence, laws of large numbers, characteristic functions, central limit theorems. Weak convergence in metric spaces, Brownian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. (Same course as Mathematics 235B.) — W, W.
[change in existing course—eff. spring 15]

235C. Probability Theory (4)
Lecture—3 hours; term paper or discussion —1 hour. Prerequisite: Mathematics 235A/course 235A or consent of instructor. Measure-theoretic foundations, abstract integration, independence, laws of large numbers, characteristic functions, central limit theorems. Weak convergence in metric spaces, Brownian motion, invariance principle. Conditional expectation. Topics selected from martingales, Markov chains, ergodic theory. (Same course as Mathematics 235C.) — S, S.
[change in existing course—eff. spring 15]

237B. Time Series Analysis (4)
Lecture—3 hours; term paper. Prerequisite: course 131B or the equivalent. Advanced topics in time series analysis and applications. Models for experimental data, measures of dependence, large-sample theory, statistical estimation and inference. Univariate and multivariate spectral analysis, regression, ARIMA models, space-state models, Kalman filtering. Offered in alternate years. — (W)
[change in existing course—eff. spring 15]

240A. Nonparametric Inference (4)
Lecture—3 hours; term paper. Prerequisite: course 231C; courses 235A-235B-235C recommended. Comprehensive treatment of nonparametric statistical inference, including the most basic materials from classical nonparametrics, robustness, nonparametric estimation of a distribution function from incomplete data, curve estimation, and theory of resampling methodology. Offered in alternate years. — (W)
[change in existing course—eff. summer 15]

240B. Nonparametric Inference (4)
Lecture—3 hours; term paper. Prerequisite: course 231C; courses 235A-235B-235C recommended. Comprehensive treatment of nonparametric statistical inference, including the most basic materials from classical nonparametrics, robustness, nonparametric estimation of a distribution function from incomplete data, curve estimation, and theory of resampling methodology. Offered in alternate years. — S
[change in existing course—eff. summer 15]

251. Topics in Statistical Methods and Models (4)
Lecture—3 hours; discussion —1 hour. Prerequisite: course 231B or equivalent. Topics may include Bayesian analysis, nonparametric and semiparametric regression, sequential analysis, bootstrap, statistical methods in high dimensions, reliability, spatial processes, inference for stochastic process, statistical methods in finance, empirical processes, change-point problems, asymptotics for parametric, nonparametric and semiparametric models, nonlinear time series, robustness. May be repeated if the topics differ, only with consent of the graduate advisor. Offered irregularly. — F, W, S, F, W, S.
[change in existing course—eff. fall 14]

252. Advanced Topics in Biostatistics (4)
Lecture—3 hours; discussion/laboratory —1 hour. Prerequisite: course/Biostatistics 222 and course/ Biostatistics 223. Biostatistical methods and models selected from the following: statistical methods in genetics and genomics; longitudinal or functional data; clinical trials and experimental design; analysis of environmental data; dose-response, nutrition and toxicology; survival analysis; observational studies and epidemiology; computer-intensive or Bayesian methods in biostatistics. May be repeated for credit with consent of adviser when topic differs. (Same course as Biostatistics 222.) Offered in alternate years. — III.
[change in existing course—eff. spring 15]

260. Statistical Practice and Data Analysis (3)
Lecture/discussion—3 hours. Prerequisite: working knowledge of advanced statistical software and completion of at least one of course 207 or 232B or the equivalent. Open to students enrolled in the graduate program in Statistics or Biostatistics, as the class also serves to provide professional service to clients and collaborators who work with these students. Principles and practice of interdisciplinary collaboration in statistics, statistical consulting, ethical aspects, and basics of data analysis and study design. Emphasis on practical methods and collaboration of statisticians with clients and scientists under instructor supervision. May be repeated one time for credit. — F, W, S, [F, W, S]
[new course—eff. fall 14]
Professional

401. Methods in Statistical Consulting (3)
Lecture—3 hours, discussion—1 hour. Students must be enrolled in the graduate program in Statistics or Biostatistics. Introduction to consulting, in-class consulting as a group, statistical consulting with clients, and in-class discussion of consulting problems. Clients are drawn from a pool of University clients. May be repeated for credit with consent of graduate adviser. Offered irregularly. (S/U grading only)—F, W, S. (F, W, S.)

(change in existing course—eff. winter 15)

Study of Religion
(A Graduate Group)

New and changed courses in Study of Religion (REL)
Graduate

231B. Theories of Language (4)
Seminar—3 hours, term paper. Prerequisite: graduate standing. Restricted to graduate students. Focuses on historical theories of language that precede and accompany post-structuralist theory. Intended to introduce graduate students to the context of modern theory formation. May cover constructivism, integrationism, and grammaticalization. Offered irregularly. —F, W, S. (F, W, S.) O’Keefe

(new course—eff. spring 15)

Sustainable Agriculture and Food Systems

New and changed courses in Sustainable Agriculture and Food Systems (SAF)
Lower Division

90X. S&AFS Portfolio (1-4)
Workshop—3—12 hours. Prerequisite: consent of instructor. Restricted to Sustainable Agriculture and Food Systems majors with lower-division standing or consent of instructor. SAFS Portfolios are designed to complement interdisciplinary, academic coursework by supporting student development of each of the SAFS Student Learning Outcomes: System, Thinking, Experimentation & Inquiry, Understanding Values, Interpersonal Communication, Strategic Management, Civic Engagement and Personal Development. May be repeated for credit. Offered irregularly. (P/NP grading only)—F, W, S, Su. (F, W, S.)

(new course—eff. spring 15)

Upper Division

192. Internship (1-12)
Internship—3-36 hours. Prerequisite: upper-division standing, consent of instructor. Restricted to Sustainable Agriculture and Food Systems majors or non-majors by consent of instructor. Upper-division internship for students enrolled in the Sustainable Agriculture and Food Systems program of study. May be repeated up to 12 units for credit. (P/NP grading only)—F, W, S. (F, W, S.) Galt, Horvath, Tomich, Van Horn

(change in existing course—eff. winter 15)

Technocultural Studies

New and changed courses in Technocultural Studies (TCS)

Lower Division

2. Critiques of Media (4)
(cancelled course—eff. winter 15)

6. Technoculture and the Popular Imagination (4)
(cancelled course—eff. fall 14)

7A. Technocultural Workshop: Digital Imaging (1)
Seminar—1 hour. Workshops in technocultural digital skills; Digital Imaging. Offered irregularly. GE credit: VL.—F, Su. (F, Su.)

(change in existing course—eff. summer 15)

7B. Technocultural Workshop: Digital Video (1)
Seminar—1 hour. Workshops in technocultural digital skills; Digital Video. Offered irregularly. GE credit: VL.—F, Su. (F, Su.)

(change in existing course—eff. summer 15)

7C. Technocultural Workshop: Digital Sound (1)
Seminar—1 hour. Workshops in technocultural digital skills; Digital Sound. Offered irregularly. GE credit: VL.—F, Su. (F, Su.)

(change in existing course—eff. summer 15)

7D. Technocultural Workshop: Web Design (1)
Seminar—1 hour. Workshops in technocultural digital skills; Web Design. GE credit: VL.

(change in existing course—eff. summer 15)

Upper Division

104. Documentary Production (4)
Lecture/discussion—3 hours; project. Prerequisite: course 7B or equivalent proficiency, course 15S. Traditional and new forms of documentary, with focus on technocultural digital skills and strategies for producing work in various media. Progression through all stages of production, from conception through post-production to critique. GE credit: VL.—Drew, Wyman

(change in existing course—eff. winter 15)

158. Technology and the Modern American Body (4)
Lecture/discussion—3 hours; term paper. Prerequisite: course 1 and either American Studies 1A or 5. The history and analysis of the relationships between human bodies and technologies in modern society. Dominant and eccentric examples of how human bodies and technologies influence one another and reveal underlying cultural assumptions. [Same course as American Studies 15B.] GE credit: ArtHum | ACGH, AH, WE.—de la Pena

(change in existing course—eff. spring 15)

170A. Advanced Technocultural Workshop (1)
Seminar—1 hour. Prerequisite: course 7A or the equivalent. Workshop in advanced technocultural digital skills: Digital Imaging. GE credit: VL.

(change in existing course—eff. winter 15)

170B. Advanced Technocultural Workshop (1)
Seminar—1 hour. Prerequisite: course 7B. Workshop in advanced technocultural digital skills: Digital Video. GE credit: VL.

(change in existing course—eff. winter 15)

170C. Advanced Technocultural Workshop (1)
Seminar—1 hour. Prerequisite: course 7C. Workshop in advanced technocultural digital skills: Web Design. GE credit: VL.

(change in existing course—eff. winter 15)

170D. Advanced Technocultural Workshop (1)
Seminar—1 hour. Prerequisite: course 7D. Workshop in advanced technocultural digital skills: Web Design. GE credit: VL.

(change in existing course—eff. winter 15)

Textiles and Clothing

New and changed courses in Textiles and Clothing (TXC)
Upper Division

180A. Introduction to Research in Textiles (2)
Laboratory—6 hours. Prerequisite: senior standing with textile-related major, and consent of instructor. Senior thesis on independent problems. Research begun in course 180A will be continued and completed in course 180B. (Deferred grading only, pending completion of sequence.) GE credit: SacSci | SS, WE.—F, W, S. (F, W, S.)

(change in existing course—eff. summer 15)

180B. Introduction to Research in Textiles (2)
Laboratory—6 hours. Prerequisite: senior standing with textile-related major, and consent of instructor. Senior thesis on independent problems. Research begun in course 180A will be continued and completed in course 180B. (Deferred grading only, pending completion of sequence.) GE credit: SacSci | SS, WE.—F, W, S. (F, W, S.)

(change in existing course—eff. summer 15)
Transportation Technology and Policy

New and changed courses in Transportation Technology and Policy (TTP)
Graduate
210. Fundamentals of Transportation Technology (4)
Lecture—2 hours; discussion—2 hours. Prerequisite: consent of instructor; Mathematics 21A, 21B, 22A; graduate or junior/senior undergraduate as a technical elective. Limited enrollment. Fundamentals of Transportation Technology is a course designed to prepare students in the basics of thermodynamics, fluid mechanics and heat transfer, transportation. Not open for credit to students who have completed course 289. (Former course 289.)—W. (W.)
(new course—eff. winter 15)

UC Davis Washington Center

New and changed courses in UC Davis Washington Center (WAS)
Upper Division
187. Gun Violence (4)
Lecture/discussion—4 hours. Restricted to students attending UC Washington Center program. Gun violence, viewed from the perspectives of criminology and public health. Topics include personal and societal contributing factors and critical assessment of potential solutions. Offered in alternate years.
(change in existing course—eff. winter 15)

192. Internship in the UC Davis Washington Program (8)
Internship—32 hours. Prerequisite: junior or senior standing, admission in the UC Davis Washington Program, and course 193 concurrently. Internship in Washington, DC with associated, supervised research project. [P/NP grading only].—F, W, S. (F, W, S.)
(new course—fall 14)

193. Washington Center Research Seminar (4)
Lecture/discussion—1 hour; independent study—3 hours; tutorial—0.5 hour. Prerequisite: course 192 concurrently. Core academic component of Washington Program. Topics coordinated with internships. Research draws on resources uniquely available in Washington, DC. Supervised preparation of extensive paper. [Same course as Political Science 193W] GE credit: SocSci, Wrt | Ol, SS, WE. —F, W, S, Su. (F, W, S, Su.)
(new course—fall 14)

University Writing Program

New and changed courses in University Writing Program (UWP)
Lower Division
12. Writing and Visual Rhetoric (4)
Lecture/discussion—3 hours; discussion—1 hour. Introduction to writing needs, conventions, and genres in design contexts. Emphasis on applying critical reading, analysis, and writing skills to designed products, such as graphics, visual communications, and clothes, and designed spaces, such as exhibitions and interior architecture. GE credit: ArtHum [AH, VL, WE. —F, W, S. (F, W, S.)
(new course—fall 14)

Upper Division
104FY. Writing in the Professions: Health (4)
Lecture/discussion—1.5 hours; web electronic discussion—1.5 hours; extensive writing. Prerequisite: course 1 or the equivalent; upper-division standing. Advanced expository writing common in the health professions, emphasizing effective communication between the writer and different audiences. Topics relate to health, disability, and disease. Suitable for students planning careers in professions such as medicine, dentistry, physical therapy, optometry. Not open to students who have taken course 104FY. GE credit: ArtHum [AH, WE. —F, W, S, Su. (F, W, S, Su.)
(new course—eff. winter 15)

104J. Writing in the Professions: Writing for Social Justice (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or the equivalent; upper-division standing. Advanced instruction in writing for Social Justice, using an interdisciplinary approach combining feminist, critical race, ethnic, cultural, and transnational studies; practice in techniques of research and styles of communication for diverse audiences. Suitable for activists in community organizing, nonprofits, politics. GE credit: ArtHum [AH, WE. —W. (W.)
(new course—eff. winter 15)

106. English Grammar (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or English 3 or Linguistics 1 or consent of instructor. Survey of present-day English grammar as informed by contemporary linguistic theories. The major syntactic structures of English; their variation across dialects, styles, and registers; their development; and their usefulness in describing the conventions of English. [Same course as English 106 and Linguistics 106.] GE credit: ArtHum [AH, WE.]
(change in existing course—spring 15)

110. Specialized Genres in Professional Writing (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: satisfaction of the upper-division writing requirement. Restricted to upper-division students who have satisfied the upper-division writing requirement. Counts toward the writing minor. Instruction in the elements and practices of professional writing in specialized genres. May be repeated twice for credit when topic differs. Offered irregularly. GE credit: ArtHum, Wrt | AH, WE. 
(change in existing course—eff. winter 15)

120. Rhetorical Approaches to Scientific and Technological Issues (4)
Lecture/discussion—3 hours; extensive writing. Restricted to upper-division standing. Application of rhetorical theories and writing issues. Topics include: Rhetorical dimensions of scientific knowledge-making; scientific voice; rhetorical figures in science; incommensurability and demarcation; epistemology; definition, and classification; science wars; models of scientific literacy and accommodation, and implications for risk communication. Offered in alternate years. GE credit: ArtHum or SciEng | AH or SE, WE. —W.
(new course—eff. winter 15)

192. Internship in Writing (1-12)
Internship—3-36 hours. Prerequisite: course 1 or English 3 or the equivalent; consent of instructor. Internships in fields where students can practice their skills. May be repeated up to 12 units for credit. [P/NP grading only] GE credit: AH.
(change in existing course—eff. winter 15)

Graduate
220. Rhetorical Approaches to Genre Study (4)
Lecture/discussion—3 hours; extensive writing. Prerequisite: graduate standing or consent of instructor. Using genre theory and methods of analysis to understand and prepare to do research on different types of writing in varying professional contexts. Emphasis on problems in organizational, professional, and/or interdisciplinary communication. Offered in alternate years. —F. W. (F, W.) Andersen, Ferris, Perrault, Thaiss, Whithaus
(new course—fall 15)

253. Writing Program Administration (4)
Lecture/discussion—3 hours; extensive writing. Theories, models, and procedures of writing programs, primarily in higher education. Developmental, first-year, and advanced writing programs, writing centers, writing-across-the-curriculum programs, writing minors and majors, and graduate programs in rhetoric and composition. Offered in alternate years. —Ferris, Thaiss, Whithaus
(new course—fall 14)

Veterinary Medicine: Anatomy, Physiology and Cell Biology

New and changed courses in Anatomy, Physiology and Cell Biology (APC)
Upper Division
100. Comparative Vertebrate Organology (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: Biological Science 1A and 1B or 2A and 2B. Functional anatomy of major organ systems in vertebrates: Each system examined from cellular to gross level in fish, birds, and mammals. Emphasis on how differentiated cell types are integrated into tissues and organs to perform diverse physiological functions. [Same course as Neurobiology, Physiology, and Behavior 123.]—F. W. (F, W.) Genetos
(change in existing course—fall 15)

Professional
286. Basics of Microscopy and Cellular Imaging (2)
Lecture—1 hour; laboratory—2 hours. Prerequisite: graduate standing; consent of instructor. Class size limited to 20 students. Practical applications of basic microscope techniques used to image cells and tissues with the goal of using these techniques to generate publication quality images. Principles of light epifluorescent, confocal and electron microscopy, their applications and limitations. Offered in alternate years. —S. Van Winkle
(change in existing course—eff. fall 14)
Veterinary Medicine:
Molecular Biosciences

New and changed courses in Veterinary Medicine: Molecular Biosciences (VMB)

Lower Division

92. Internship (1-12)

Internship—3.36 hours. Prerequisite: lower division standing; consent of instructor. Work experience off and on campus in all subject areas offered in the Department of Molecular Biosciences. Internships supervised by a member of the faculty. (F/NP grading only.)—F, W, S, Su. (F, W, S, Su.)

[change in existing course—eff. winter 15]

Upper Division

192. Internship (1-12)

Internship—3.36 hours. Prerequisite: completion of 84 units; consent of instructor. Work experience off and on campus in all subject areas offered in the Department of Molecular Biosciences. Internships supervised by a member of the faculty. May be repeated for credit. (F/NP grading only.)—F, W, S, Su. (F, W, S, Su.)

[change in existing course—eff. winter 15]

Graduate

290. Seminar (1)

Seminar—1 hour. Prerequisite: graduate standing; consent of instructor To topics in nutrition, pharmacology/toxicology, and biochemistry. May be repeated for credit. (S/U grading only.)—F, W, S, Su. (F, W, S, S.)

[change in existing course—eff. winter 15]

Professional

397T. Tutoring in Molecular Biosciences (1-5)

Discussion—1.5 hours. Prerequisite: graduate or professional standing; consent of instructor. Experience in professional curriculum for graduate or professional students, not teaching assistants, under direct supervision of instructor. May be repeated up to 5 units of credit (S/U grading only.)—F, W, S, (F, W, S.)

[change in existing course—eff. winter 15]

Veterinary Medicine:
Pathology, Microbiology, and Immunology

New and changed courses in Veterinary Medicine: Pathology, Microbiology, and Immunology (PMI)

Upper Division

127. Medical Bacteria and Fungi (5)

Lecture—3 hours; laboratory—6 hours. Prerequisite: any Microbiology course with lab; Immunology strongly recommended. Introduction to the bacterial and mycotic pathogens of man and animals, with emphasis on pathogenic mechanisms and ecologic aspects of infectious disease. —S. (S.) Lefebvre

[change in existing course—eff. spring 15]

129Y. One Health: Human, Animal & Environment Interfaces (3)

Lecture—2 hours; webinar electronic discussion. Class size limited to upper division graduate students in good standing with the school and who fulfill the course prerequisites below; enrollment limited to 100 students/term. Introduction to fundamental, challenges, and opportunities in One Health using local and global health case studies. Animal, human, and environmental health problems, along with tools and transdisciplinary approaches, will be introduced to foster innovative thinking that addresses complex issues. GE credit. SciEng or SocSci | OL, 0E or SS, SL.—S. (S.) Miller, Papageorgiou

[change in existing course—eff. winter 15]

Graduate

221. Topics in Virus Research (1)

Discussion—1 hour. Prerequisite: graduate student standing (Ph.D. or M.S.). Restricted to 10 students. Discussion-based seminar covering graduate student virology research. Informal presentations and discussion of technical problems in research design and experimentation are encouraged. Current status of the research project is not important. May be repeated four times for credit. (S/U grading only.)—F. (F.) Murphy

[change in existing course—eff. winter 15]

270. Advanced Immunology (3)

Lecture—2 hours; discussion—1 hour. Prerequisite: Introductory course in immunology. Restricted to graduate student status in the Comparative Pathology Graduate Group; all other students require consent of instructor. Current concepts of immunology with an emphasis on interactions between the host, the environment and the pathogens. These interactions will include those that are protective and successful for the host as well as those that are deleterious. —W. (W.) Stott

[change in existing course—eff. winter 15]

Veterinary Medicine: Population Health and Reproduction

New and changed courses in Veterinary Medicine: Population Health and Reproduction (PHR)

Graduate

241. Advanced Topics in Canine Genetics and Genomics (2)

Discussion—2 hours. Prerequisite: Genetics 201A, 201C (or equivalents, with consent of instructor). Limited enrollment. In-depth study of topics in canine genomics and genetics. Topics will vary annually, but can include positional cloning, whole genome association, complex traits and linkage disequilibrium. Students will lead discussions on assigned readings. May be repeated for credit when topic differs. Offered in ARH (or equivalents) with consent of instructor. —J. (J.) Bannasch

[change in existing course—eff. winter 15]


Lecture—2 hours; discussion—0.5 hours; laboratory—0.5 hours. Prerequisite: undergraduate genetics, biology, and statistics. Restriction to 20 students. Graduate students required to consent of instructor. Recommended. Class size limited to 20 students; graduate students, 2nd or 3rd year veterinary students, advanced undergraduate students with consent of instructor. Introduction to the field of applied ecological genetics to include applications in conservation ecology, population genetics, population biology, wildlife health and disease ecology. —H. (H.) Sacks

[change in existing course—eff. fall 14]

243. Advanced Topics in Conservation Genetics (2)

Discussion—18 sessions; lecture—2 sessions. Prerequisite: undergraduate genetics and ecology or consent of instructor. Restricted to 16 students. In-depth study of topics related to the application of genetic tools to wildlife conservation. Topics will vary annually, but may include use of non-invasive methods of genetic assessment and monitoring of wildlife populations. Students will lead discussions on assigned readings. May be repeated for credit when topic differs. (S/U grading only.)—F. (F.) Sacks

[change in existing course—eff. winter 15]

251. Food and Water Borne Safety (2)

Cancelled course—eff. fall 14)

277. Mathematical Models in Epidemiology (3)

Lecture/discussion—2 hours; laboratory—2 hours. Prerequisite: Preventive Veterinary Medicine 403 and Medicine & Epidemiology 405; consent of instructor; although not required, students are encouraged to refresh their knowledge of high school calculus and differential equations. Class size limited to 30 students. Theory of epidemicological modeling concepts to infectious diseases to include discrete and continuous time models, their use to explore disease dynamics and investigate prevention and control strategies for human and veterinary infectious diseases. (Same course as Epidemiology 277.)—S. (S.) Alyn

[change in existing course—eff. fall 15]

Veterinary Medicine: Preventive Veterinary Medicine

New and changed courses in Veterinary Medicine: Preventive Veterinary Medicine (MPM)

Graduate

202. Medical Statistics I (4)

Lecture—15 sessions; laboratory—10 sessions. Prerequisite: PMPM or MPH standing, or consent of the instructor. Restricted to 80 students. Basic statistics in clinical, laboratory and population medicine: descriptive statistics; probability; binomial, Poisson, normal, t-, F-, and Chi-square distributions; sampling distributions; parameter estimation; hypothesis testing; elementary nonparametric methods, simple linear regression and correlation; life table construction and analysis. —S. (S.) Farver

[new course—eff. summer 15]

203. Medical Statistics II (4)

Lecture—3 hours; laboratory—2 hours. Prerequisite: course 202 [or equivalent] or consent of instructor. Continuation of course 202. Analysis of variance in biomedicale sciences; nonparametric methods; multiple regression; unconditional logistic regression; biomedical applications of statistical methods. Microcomputer applications in population medicine to reinforce principles that are taught in lecture. Required for students in the Preventive Veterinary Program Graduate Council (PNH) and the Masters of Public Health Program (MPPH). —Farver, Thomas

[new course—eff. fall 15]
206. Epidemiologic Study Design (4)
Lecture—30 sessions; discussion—9 sessions; laboratory—30 sessions. Prerequisite: course 205 or consent of instructor. Builds on concepts presented in course 205. Concepts of epidemiologic study design—clinical trials, observational cohort studies, case control studies—introduced in course 205A are covered in more depth, using a problem-based format. Discussion of published epidemiologic studies. (Same course as Epidemiology 206.)
(new course—eff. fall 14)

207. Applied Epidemiologic Problem Solving (1)
Laboratory—discussion—2 hours. Integration of epidemiologic and statistical methodology in a problem-solving approach to contemporary animal population health issues. Data validation and manipulation. —W. (W.) Martinez-Lopez
(new course—eff. fall 14)

Viticulture and Enology

New and changed courses in Viticulture and Enology (VEN)

Upper Division
123L Analysis of Musts & Wines Laboratory (2)
Lab—3 hours; independent study—3 hours. Prerequisite: Chemistry 2C and 8B, or equivalent, Agricultural Management and Rangeland Resources 21, and course 123 (course 123 may be taken concurrently). Restricted to upper division and graduate students in Viticulture & Enology; others by approval of instructor. Fundamental principles of analytical chemistry as they relate to specific methods used in wine-making. Laboratory exercises demonstrating various chemical, physical and biochemical methods. Data will be analyzed and results interpreted in weekly lab reports, includes student-designed independent project and written report. GE credit: SciEng, Writ | QL, SE, VL, WE. —F. (F.) Waterhouse
(change in existing course—eff. winter 15)

126L Wine Stability Laboratory (2)
Laboratory—3 hours; independent study—3 hours. Prerequisite: course 126 (may be taken concurrently); consent of instructor. Restricted to upper division fermentation science, viticulture and enology majors, or graduate students in food science, agricultural management, environmental chemistry, microbiology or by consent of instructor. Practical application of principles of equilibria and rates of physical and chemical reactions to wine stability. GE credit: SciEng | SE, WE. —W. (W.) Boulton
(change in existing course—eff. winter 15)

190X. Winemaking Seminar (1)
Seminar—1 hour; discussion—1 hour. Prerequisite: course 3. Open to Viticulture and Enology majors and graduate students. Outside speakers on a specific winemaking topic chosen for the quarter. Discussion with the speaker hosted by the faculty member(s) in charge. May be repeated three times for credit. (P/NP grading only.) GE credit: SE—S. (S.)
(change in existing course—eff. winter 15)

198. Directed Group Study (1-5)
Prerequisite: consent of instructor. (P/NP grading only)—F, W, S. (W., S.)
(change in existing course—eff. winter 15)

Graduate

216. Sustainable Vineyard Development (3)
Lecture/discussion—3 hours; fieldwork—2 hours; term paper. Prerequisite: course 101A, 101B, 101C, and one of courses 115 and 118 or consent of instructor; course 110, Soil Science 100, Atmospheric Science 133 and Agricultural and Resource Economics 140 recommended. Application of plant, meteorological, soil, water, GIS, and economic sciences to sustainable vineyard development. Prepara tion of a comprehensive study to determine the viticultural and economic feasibility of a given site for raisin, table, or wine grape production. —F. (F.) Smart
(change in existing course—eff. spring 15)

224. Advances in the Science of Winemaking (3)
Lecture—3 hours. Prerequisite: course 125, 126 and graduate standing or consent of instructor. Selected topics in the science and technology of winemaking. Topics drawn from current research of participating faculty. Critical analysis of the technical content of published material. —S. (S.)
(change in existing course—eff. spring 15)

292. Advanced Internship (1-15)
Internship—3-45 hours. Prerequisite: courses 123, 123L, 124, 124L, 125L, 126L, 126, 128L; consent of instructor. Restricted to Viticulture & Enology Graduate Group graduate students. Work experience related to Fermentation Science (Enology) or Plant Science (Viticulture) majors. Internships must be approved and supervised by a graduate group faculty member or students major professor, but are arranged by the student. May be repeated 15 units for credit. (S/U grading only).—F. W. S. (F, W. S.)
(change in existing course—eff. fall 10)

Wildlife, Fish, and Conservation Biology

New and changed courses in Wildlife, Fish, and Conservation Biology (WFC)

Upper Division
101. Field Research in Wildlife Ecology (2)
Lecture/discussion—2 hours. Prerequisite: Consent of instructor and one upper division course in each of ecology, statistics, and ornithology, mammalogy, or herpetology. Field research in ecology of wild vertebrates in terrestrial environments, formulation of testable hypotheses, study design, introduction to research methodology, oral and written presentation of results. Offered in alternate years. GE credit: SciEng | Writ | SE, Wt, WE. —F. (F.) Eadie, Kelly, Todd, Van Vuren
(change in existing course—eff. winter 15)

101L. Field Research in Wildlife Ecology: Laboratory (4)
Lecture/discussion—2 hours; field work—15 hours. Prerequisite: consent of instructor, course 101 (may be taken concurrently), and one upper division course in each of ecology, statistics, and ornithology, mammalogy, or herpetology. Limited enrollment. Field research in ecology of wild vertebrates in terrestrial environments; testing ecological hypotheses through field research, application of research methodology, supervised independent research projects. Held between Labor Day and fall quarter. Offered in alternate years.—F. Eadie, Kelly, Todd, Van Vuren
(change in existing course—eff. winter 15)

110L. Laboratory in Biology and Conservation of Wild Mammals (3)
Laboratory—6 hours. Prerequisite: course 110 (may be taken concurrently); consent of instructor. Limited enrollment. Laboratory exercises in the morphology, systematics, species identification, anatomy, and adaptations of wild mammals to different habitats.—S. (S.) Kelt
(change in existing course—eff. winter 15)

111L. Laboratory in Biology and Conservation of Wild Birds (3)
Laboratory—6 hours; fieldwork—3 hours. Prerequisite: course 111 (may be taken concurrently); consent of instructor. Limited enrollment. Laboratory exercises in bird species identification, anatomy, molts, age and sex, specialized adaptations, behavior, research, with emphasis on conservation of wild birds. Several weekend field trips, after class bird walks, and individual bird study are required.—F. (F.) Eadie
(change in existing course—eff. winter 15)

121. Physiology of Fishes (4)
Lecture—3 hours; laboratory—3 hours. Prerequisite: upper division courses in nutrition and physiology or consent of instructor. Comparative physiology, growth, reproduction, behavior, and energy relations of fishes. Offered irregularly. GE credit: SciEng, Writ | SE, WE.
(change in existing course—eff. winter 15)

136. Ecology of Waterfowl and Game Birds (4)
Lecture—3 hours; laboratory—3 hours; fieldwork—1 hour. Prerequisite: course 111, 111L or the equivalent, or consent of instructor. Detailed examination of distribution, behavior, population dynamics, and management of waterfowl and upland game birds. Offered in alternate years.—W. (W.) Eadie
(change in existing course—eff. spring 15)

144. Marine Conservation Science (4)
Lecture—3 hours; discussion—3 hours. Prerequisite: course in introductory ecology. Class size limited to 30 students. Key differences between marine and terrestrial ecosystems, major stressors of marine ecosystems (e.g., fisheries, pollution, bioinvasions, climate change and habitat destruction) and their consequences. Laws and agencies responsible for addressing problems, and the policies used. Offered in alternate years.—F. (F.) Bastard
(new course—eff. fall 15)

150. Urban Wildlife Ecology (3)
Lecture—3 hours. Prerequisite: Biological Sciences 2A, 2B, or equivalent. Concepts of wild vertebrates, including habitat selection, spatial organization, demography, population dynamics, competition, predation, herbivory, energetics, and community dynamics, set in the context of human caused degradation of environments in North America.—F. (F.) Van Vuren
(change in existing course—eff. fall 15)

151. Wildlife Ecology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 2B or equivalent. Study of wild vertebrates, including habitat selection, spatial organization, demography, population dynamics, competition, predation, herbivory, energetics, and community dynamics, set in the context of human caused degradation of environments in North America.—F. (F.) Van Vuren
(change in existing course—eff. fall 15)

153. Wildlife Ecotoxicology (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: introductory courses in organic chemistry, ecology, and physiology, or consent of instructor. Environmental Toxicology 101 recommended. Various forms of environmental pollution in relation to fish and wildlife, the effects and mechanisms of pollutants, effects on individuals and systems, laboratory and field eco-
Women’s Studies

New and changed courses in Women’s Studies (WMS)

Lower Division

80. Special Topics in Women’s Studies (4)
Lecture/discussion—4 hours. Limited enrollment. In-depth examination of a topic related to the research interest of the instructor. May be repeated for credit when topic differs.—Constable, Ho, Kaiser, Nettles-Barceló
(change in existing course—eff. winter 15)

20. Cultural Representations of Gender (4)
Lecture/discussion—4 hours. Interdisciplinary investigation of how specific cultures represent gender difference. Examine a variety of cultural forms and phenomena including film, television, literature, music, popular movements, and institutions. Offered irregularly. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, VL, WC, WE.
(change in existing course—eff. spring 16)

60. Feminist Critiques of Western Thought (4)
Lecture/discussion—4 hours. Critical introduction to major traditions of social thinking in the West from a feminist perspective. Offered irregularly. GE credit: ArtHum or SocSci, Div, Wrt | ACGH, AH or SS, DD, VL, WE.
(change in existing course—eff. spring 16)

Upper Division

104. Feminist Approaches to Inquiry (4)
Lecture/discussion—4 hours. Prerequisite: course 50 recommended or consent of instructor. Feminist applications and transformations of traditional disciplinary practices; current issues and methodologies in feminist interdisciplinary work. GE credit: ArtHum or SocSci | ACGH, AH or SS, DD, WE. —W. (W.
(change in existing course—eff. spring 16)

130. Feminism and the Politics of Family Change (4)
Lecture/discussion—4 hours. Examination of contemporary conflicts over family values and the changing family from a feminist perspective. Offered in alternate years. GE credit: ArtHum or SocSci, Div | ACGH, AH or SS, DD, WE. —W. (W.
(change in existing course—eff. spring 16)

164. Topics in Gender and Cinematic Representation (4)
Lecture/discussion—4 hours. Prerequisite: course 50 recommended or consent of instructor. Offered in alternate years. GE credit: ArtHum, Div | AH, VL, WE.
(change in existing course—eff. spring 16)

178A. Women Writers and the Transnational Imaginary: The Arab World (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women’s Studies, or consent of instructor. Offered in alternate years. GE credit: ArtHum, Div | AH, WC, WE. —Constable
(change in existing course—eff. summer 15)

178B. Women Writers and the Transnational Imaginary: Asia (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women’s Studies, or consent of instructor. Offered in alternate years. GE credit: ArtHum, Div | AH, WC, WE. —Constable
(change in existing course—eff. summer 15)

178C. Women Writers and the Transnational Imaginary: The Caribbean (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women’s Studies, or consent of instructor. Offered in alternate years. GE credit: ArtHum, Div | AH, WC, WE. —Constable
(change in existing course—eff. summer 15)

184. Science, Gender, and Social Justice (4)
Lecture/discussion—4 hours; term paper. Class size limited to 60 students. Critical reading and reflection on the history of Western science, scientific institutions and the changing role of science in relation to inequalities of class, race, gender and sexuality, and global struggles for equality and justice. Offered irregularly. GE credit: ArtHum or SocSci, Div | AH or SS, DD, WC, WE.
(change in existing course—eff. spring 16)

160. Women, ‘Race’ and Sexuality in Postcolonial Cinema (4)
Lecture/discussion—4 hours; film viewing—3 hours. Class size limited to 90 students. Feminist analysis of race, sexuality and class in the representation of women in commercial and/or independent films. Offered in alternate years. GE credit: ArtHum, Div | AH, VL, WC, WE. (change in existing course—eff. winter 16)

162. Feminist Film Theory and Criticism (4)
Lecture/discussion—4 hours; film-viewing—3 hours. Historical overview of contemporary issues in feminist film theory, including representation, spectatorship, and cultural production. Film stars, women filmmakers, and the intersections of gender, race, sexuality, and class in films and their audiences. Offered in alternate years. GE credit: ArtHum, Div | ACGH, AH, DD, VL, WC, WE.
(change in existing course—eff. spring 16)

164. Topics in Gender and Cinematic Representation (4)
Lecture/discussion—4 hours; film-viewing—3 hours. Examination of a specific topic within the broad rubric of gender and cinema. Possible topics include Latinas in Hollywood, gender, nation, cinema; and gender and film industry. Offered in alternate years. GE credit: ArtHum, Div | AH, VL, WC, WE.
(change in existing course—eff. spring 16)

Graduate

223. Conservation Biology and Animal Behavior (3)
Lecture—1.5 hours; discussion—1.5 hours. Prerequisite: Ecology 208 or Animal Behavior 221; consent of instructor. Influences of concepts of animal behavior (functional, evolutionary, developmental, mechanistic, and methodological issues) on conservation biology theory and practice. Offered in alternate years.—S. (S.)
(change in existing course—eff. winter 16)

230. Advanced Physiological Ecology of Wildlife (4)
Lecture—3 hours; discussion—1 hour. Advanced principles of physiological ecology. Ecological, evolutionary and behavioral perspectives on physiological mechanisms used by animals to adapt to their environments in the context of climate change and other threats to biodiversity. Primary literature will form the basis of discussion.—W. (W.) Fangue (new course—eff. winter 15)

Toxicology, examples/case histories, philosophical/management considerations. Offered irregularly. GE credit: SciEng, Wrt | SE, VL, WE. —S.
(change in existing course—eff. fall 14)

157. Coastal Ecosystems (4)
Lecture—3 hours; laboratory—3 hours; fieldwork—3 hours. Prerequisite: Environmental Science 100 or Evolution and Ecology 101; course work in organismal biology, physical geography, and geology recommended. Overview of coastal ecosystems, physical and biological elements and processes, and coastal zone dynamics, including sandy, rocky and muddy shorelines, estuaries, dunes and coastal watersheds. Discussion of the role of historical factors and conservation, restoration, and management approaches. Analytical field and lab techniques introduced. Offered irregularly. GE credit: SciEng, Wrt | SE, VL, WE.—S.
(change in existing course—eff. fall 14)

158. Infectious Disease in Ecology and Conservation (3)
Lecture—3 hours. Prerequisite: Evolution and Ecology 101 or Environmental Science and Policy 100 or Veterinary Medicine 409 or the equivalent. Introduction to the dynamics and control of infectious disease in wildlife, including zoonotic diseases and those threatening endangered species. Basic epidemiological models and their applications. Role of scientists in developing disease control policies. Offered irregularly. (change in existing course—eff. winter 15)

160. Animal Coloration (3)
Lecture/discussion—3 hours. Prerequisite: Biological Sciences 2A, 2B, 2C. Evolutionary and ecological significance of coloration in invertebrates, animals, birds, reptiles, amphibians, fish, cephalopods, crustaceans, spiders, insects, humans as well as color in fashion, art, and history. Topics include history, protective coloration, warning coloration, mimicry, sexual dichromatism and color change. Offered in alternate years.—W. (W.) Caro (new course—eff. winter 16)

2014-2016 General Catalog Course Supplement and Policies and Requirements Addendum
178E. Women Writers and the Transnational Imaginary; Diasporic Women Writers in Europe (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women's Studies, or consent of instructor. Writings by women from diverse regions and cultures, understood in their cultural, socio-economic, and historical contexts, with each course offering a focus on women’s writing in specific geographic/national locations and their diasporas: Diasporic Women Writers in Europe. Offered irregularly. GE credit: ArtHum, Div, Wrt | AH, WC, WE. —Constable (change in existing course—eff. summer 15)

178F. Transnationalism and Writing by Women of Color (4)
Lecture/discussion—4 hours. Prerequisite: one course in Women and Gender Studies, or consent of instructor. Writings by women of color in a transnational framework, understood in their cultural, socio-economic, and historical contexts. The interrelation among gender, writing, nationalism, and transnationalism, with focus on women’s writing in specific geographic/national locations and their diasporas: topics on Women Writers of Color. Offered irregularly. GE credit: ArtHum, Div, Wrt | AH, WC, WE. (change in existing course—eff. summer 15)

182. Globalization, Gender and Culture (4)
Lecture/discussion—4 hours. Critical gender analysis of globalization as a process of interconnected cultural, social and economic transformations influenced by gender, nation, class and race/ethnicity. Critical self-reflection and social observation skills. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, OL, WC, WE. —S. (S.) (change in existing course—eff. spring 16)

191. Capstone Seminar (4)
Seminar—4 hours. Prerequisite: course 104 or Textiles and Clothing 107, and course 194HA, course 199, or Textiles and Clothing 199, or consent of instructor. Revision, completion, and presentation of senior research or creative project. Creating a multimedia Web site for publishing research and creative projects. GE credit: ArtHum or SocSci, Wrt | ACGH, AH or SS, DD, WE. —S. (S.) Kaiser (change in existing course—eff. winter 15)

194HA. Senior Honors Project in Women's Studies (4-6)
Independent study—12 hours. Prerequisite: senior standing, Women's Studies major, and adviser’s approval. In consultation with an adviser, students complete a substantial research paper or significant creative project on a Women’s Studies topic. [Deferred grading only, pending completion of sequence.] GE credit: ArtHum or SocSci | AH or SS, WE. —Constable, Craig, Ho, Joseph, Kaiser, Mama, Nettles-Barcelón (change in existing course—eff. summer 15)

194HB. Senior Honors Project in Women's Studies (4-6)
Independent study—12 hours. Prerequisite: senior standing, Women’s Studies major, and adviser’s approval. In consultation with an adviser, students complete a substantial research paper or significant creative project on a Women’s Studies topic. [Deferred grading only, pending completion of sequence.] GE credit: ArtHum or SocSci | AH or SS, WE. —Constable, Craig, Ho, Joseph, Kaiser, Mama, Nettles-Barcelón (change in existing course—eff. summer 15)

195. Thematic Seminar in Critical Gender and Women's Studies (4)
Seminar—4 hours. Group study of a topic, issue or area in feminist theory and research involving intensive reading and writing. May be repeated for credit. Offered irregularly. GE credit: ArtHum or SocSci, Div, Wrt | AH or SS, ACGH, DD, WE. (change in existing course—eff. spring 16)

Graduate

201. Special Topics in Feminist Theory and Research (4)
Lecture/discussion—4 hours. Limited enrollment. Explores in depth a topic in feminist theory and research related to the research interests of the instructor. May be repeated for credit when topic differs. —S. Constable, Craig, Ho, Joseph, Kaiser, Mama, Nettles-Barcelón, Swain (change in existing course—eff. winter 15)
Incomplete Grades

Addition to the Incomplete Grades section of the Academic Information chapter
If the degree has not been conferred, and the work has not been completed before the end of the term three calendar years after the grade Incomplete has been assigned, and during which the student has not been in academic residence as defined in Regulation 610, the grade Incomplete shall remain on the student's record, unless the course is repeated. This time-limit for the completion of courses assigned the grade Incomplete shall apply to all and only those courses in which the grade Incomplete is assigned on or after September 1, 2010 per Academic Senate Regulation A540(c).

Minor Programs Offered by UC Davis

Addition to the Minor Programs Offered by UC Davis listing
Electrical Engineering .............................. ENGR

Repeating Courses

Change to Graduate Student Repeat Regulation
Graduate students, with the consent of the appropriate graduate adviser and the dean of Graduate Studies, may repeat any course in which they received a C, D, F or U, up to a maximum of three courses for all courses repeated. Courses in which a grade of C, D or F has been earned may not be repeated on an S/U basis. Courses in which a grade of U as received may be repeated on an S/U basis.

Undergraduate Education

Change to Undergraduate Education, College of Engineering section
Transfer students. To be eligible for transfer into the College of Engineering, you must have at least ninety transferable quarter units (sixty semester units) from another institution. You must complete all lower division engineering major requirements with a minimum GPA of 3.100 in these required courses.
We give highest priority for transfer admission to California community college transfer applicants who have completed two transferable English composition courses and all of the required lower division engineering major requirements offered at the community college they attended.
We give lower priority for admission to community college applicants who are missing one or two of the required lower division engineering major requirements. Community college applicants will be denied admission if they are missing three or more of the required lower-division courses.
Priority is next given to junior-level transfers from other UC campuses and other four-year institutions in and out of state. These students must also have completed all of the required lower-division engineering major requirements.
Successful applicants are admitted to a specific major. You may be limited in your ability to change majors within the college after you are admitted.

Degrees Offered by UC Davis

Addition to the Degrees Offered by UC Davis listing
Cognitive Science
A.B., B.S. ........................................ L&S

General Education Options/Courses

Addition to the New General Education Courses; Fall 2011 and On section

Arts & Humanities (AH)
English 163

World Cultures (WC)
English 163

Writing Experience (WE)
English 163
<table>
<thead>
<tr>
<th>Examination</th>
<th>Score</th>
<th>Credit Toward Degree Quarter Units</th>
<th>UC Transfer</th>
<th>IGETC Area</th>
<th>UC Davis Course Equivalencies</th>
<th>Duplicate Credit Allowance</th>
<th>Continuing UC Davis Course</th>
<th>Comment *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art History</td>
<td>5</td>
<td>8</td>
<td>UCH</td>
<td>3A or 3B</td>
<td>Art History 1A, 1B, 1C</td>
<td>No</td>
<td>No</td>
<td>a</td>
</tr>
<tr>
<td>Art History</td>
<td>4</td>
<td>8</td>
<td>UCH</td>
<td>3A or 3B</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>a</td>
</tr>
<tr>
<td>Biology</td>
<td>5</td>
<td>4, 3, 8</td>
<td>UCS</td>
<td>5B w/lab</td>
<td>Biological Sciences 10</td>
<td>No</td>
<td>No</td>
<td>b</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>8</td>
<td>UCS</td>
<td>5A w/lab</td>
<td>Chemistry 2A</td>
<td>Yes*</td>
<td>Consult w/ adviser</td>
<td>b</td>
</tr>
<tr>
<td>Chemistry</td>
<td>4</td>
<td>3</td>
<td>UCS</td>
<td>5A w/lab</td>
<td>Chemistry 10</td>
<td>No</td>
<td>No</td>
<td>b</td>
</tr>
<tr>
<td>Chinese language and Culture</td>
<td>5</td>
<td>4, 3, 8</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>Consult w/ adviser</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>Comparative Government and Politics</td>
<td>5</td>
<td>4, 3, 4</td>
<td>UCB</td>
<td>4H</td>
<td>Political Science 2*</td>
<td>No</td>
<td>No</td>
<td>b</td>
</tr>
<tr>
<td>Computer Science A</td>
<td>5</td>
<td>4, 3, 2</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>b</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>5</td>
<td>4, 4</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>b</td>
</tr>
<tr>
<td>Computer Science AB</td>
<td>3</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>e</td>
</tr>
<tr>
<td>English - Language and Composition</td>
<td>5</td>
<td>4, 8*</td>
<td>UCE</td>
<td>1A</td>
<td>English 3, University Writing Program 3</td>
<td>No</td>
<td>d</td>
<td>c</td>
</tr>
<tr>
<td>English - Language and Composition</td>
<td>3</td>
<td>8*</td>
<td>UCE</td>
<td>1A</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>c</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>5</td>
<td>4, 3, 8</td>
<td>UCS</td>
<td>5A w/lab</td>
<td>Environmental Science and Policy 10</td>
<td>No</td>
<td>No</td>
<td>b</td>
</tr>
<tr>
<td>European History</td>
<td>5</td>
<td>4, 3, 8</td>
<td>UCB / H</td>
<td>3B or 4F</td>
<td>History 4B, 4C</td>
<td>No</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>French language</td>
<td>5</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 23 or consult w/ adviser</td>
<td>–</td>
<td>f</td>
</tr>
<tr>
<td>French language</td>
<td>4</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 21</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>French language</td>
<td>3</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 3</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>French language and Culture</td>
<td>5</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 22</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>French language and Culture</td>
<td>4</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 21</td>
<td>No</td>
<td>f</td>
</tr>
<tr>
<td>French language and Culture</td>
<td>3</td>
<td>8*</td>
<td>UCH</td>
<td>3B or 6A</td>
<td>No</td>
<td>French 3</td>
<td>No</td>
<td>f</td>
</tr>
</tbody>
</table>

* Effective with May 2015 AP exam, course credit for Political Science 2 will no longer be awarded for AP exam scores of 3, 4 and 5.

* Effective with May 2015 AP exam, course credit for Computer Science 2 will no longer be awarded for AP exam scores of 3, 4 and 5.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.

* 4 transferable units max. for both Computer Science exams.
<table>
<thead>
<tr>
<th>Examination</th>
<th>Score</th>
<th>Credit Toward Degree</th>
<th>Quarter Units</th>
<th>IGETC Area</th>
<th>UC Davis Course Equivalencies</th>
<th>Duplicate Credit Allowance</th>
<th>Continuing UC Davis Course</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>French Literature</td>
<td>5, 4, 3</td>
<td>B</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Upper Division</td>
<td>No</td>
<td>French 100 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language</td>
<td>5</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 21</td>
<td>No</td>
<td>German 22 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language</td>
<td>4</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 20</td>
<td>No</td>
<td>German 21 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language</td>
<td>3</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 3</td>
<td>No</td>
<td>German 20 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language and Culture</td>
<td>5</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 21</td>
<td>No</td>
<td>German 22 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language and Culture</td>
<td>4</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 20</td>
<td>No</td>
<td>German 21 or consult w/ adviser</td>
</tr>
<tr>
<td>German Language and Culture</td>
<td>3</td>
<td>B*</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>German 3</td>
<td>No</td>
<td>German 20 or consult w/ adviser</td>
</tr>
<tr>
<td>Human Geography</td>
<td>5, 4, 3</td>
<td>A</td>
<td>4</td>
<td>UCB</td>
<td>4E</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Italian Language and Culture</td>
<td>5</td>
<td>A</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Italian 5</td>
<td>No</td>
<td>Italian 9 or consult w/ adviser</td>
</tr>
<tr>
<td>Italian Language and Culture</td>
<td>4</td>
<td>A</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Italian 4</td>
<td>No</td>
<td>Italian 5 or consult w/ adviser</td>
</tr>
<tr>
<td>Italian Language and Culture</td>
<td>3</td>
<td>A</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Italian 3</td>
<td>No</td>
<td>Italian 4 or consult w/ adviser</td>
</tr>
<tr>
<td>Japanese Language and Culture</td>
<td>5, 4, 3</td>
<td>A</td>
<td>8</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>--</td>
<td>--</td>
<td>Consult w/ adviser</td>
</tr>
<tr>
<td>Latin</td>
<td>5, 4, 3</td>
<td>A*</td>
<td>4</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Latin 2</td>
<td>No</td>
<td>Consult w/ Classics adviser</td>
</tr>
<tr>
<td>Latin (Vergil)</td>
<td>5, 4, 3</td>
<td>A*</td>
<td>4</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Latin 2</td>
<td>No</td>
<td>Consult w/ Classics adviser</td>
</tr>
<tr>
<td>Latin (Vergil)</td>
<td>5, 4, 3</td>
<td>A*</td>
<td>4</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>Latin 2</td>
<td>No</td>
<td>Consult w/ Classics adviser</td>
</tr>
<tr>
<td>Latin Literature</td>
<td>5, 4, 3</td>
<td>A</td>
<td>4</td>
<td>UCH</td>
<td>3B and 6A</td>
<td>--</td>
<td>--</td>
<td>Consult w/ Classics adviser</td>
</tr>
<tr>
<td>Macroeconomics</td>
<td>5, 4, 3</td>
<td>A</td>
<td>4</td>
<td>UCB</td>
<td>4B</td>
<td>Economics 1B</td>
<td>No</td>
<td>Economics 101</td>
</tr>
<tr>
<td>Mathematics - Calculus AB</td>
<td>5, 4</td>
<td>A*</td>
<td>4</td>
<td>UCM</td>
<td>2A</td>
<td>Mathematics 12, 16A, 17A or 21A</td>
<td>12 No, 16A, 17A, 21A Yes</td>
<td>Mathematics 16B, 17B or 21B</td>
</tr>
<tr>
<td>Mathematics - Calculus AB</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>UCM</td>
<td>2A</td>
<td>--</td>
<td>--</td>
<td>Mathematics 16A, 17A or 21A</td>
</tr>
</tbody>
</table>
### College Board Advanced Placement (AP) Examination Credit

<table>
<thead>
<tr>
<th>Examination</th>
<th>Score</th>
<th>UC Transfer</th>
<th>IGETC Area</th>
<th>UC Davis Course Equivalencies</th>
<th>Duplicate Credit Allowance</th>
<th>Continuing UC Davis Course</th>
<th>Comment *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics - Calculus BC</td>
<td>4, 3</td>
<td>UCM</td>
<td>2A</td>
<td>Mathematics 12, 16A, 17A or 21A</td>
<td>-</td>
<td>-</td>
<td>b</td>
</tr>
<tr>
<td>Microeconomics</td>
<td>5, 4</td>
<td>UC-B</td>
<td>4B</td>
<td>Economics 1A</td>
<td>No</td>
<td>Economics 100</td>
<td>-</td>
</tr>
<tr>
<td>Music Theory</td>
<td>5, 4</td>
<td>UC-S</td>
<td>8</td>
<td>-</td>
<td>Music 10</td>
<td>No</td>
<td>-</td>
</tr>
<tr>
<td>Physics I</td>
<td>5, 4</td>
<td>UCS</td>
<td>5A</td>
<td>Physics 1A, 1B</td>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physics II</td>
<td>3</td>
<td>UCS</td>
<td>5A</td>
<td>Physics 1A</td>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physics C1—Mechanics</td>
<td>5, 4</td>
<td>UC-S</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physics C1—Mechanics</td>
<td>3</td>
<td>UCS</td>
<td>5A</td>
<td>Physics 1A</td>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physics C2—Electricity/Magnetism</td>
<td>5, 4</td>
<td>UC-S</td>
<td>4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Physics C2—Electricity/Magnetism</td>
<td>3</td>
<td>UCS</td>
<td>5A</td>
<td>Physics 1A</td>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Psychology</td>
<td>5</td>
<td>UC-B</td>
<td>4</td>
<td>Psychology 1</td>
<td>No</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>5</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 23</td>
<td>No</td>
<td>Spanish 24 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>4</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 22</td>
<td>No</td>
<td>Spanish 23 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language</td>
<td>3</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 21</td>
<td>No</td>
<td>Spanish 22 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language and Culture</td>
<td>5</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 23</td>
<td>No</td>
<td>Spanish 24 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language and Culture</td>
<td>4</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 22</td>
<td>No</td>
<td>Spanish 23 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Language and Culture</td>
<td>3</td>
<td>UCM</td>
<td>3B and 6</td>
<td>Spanish 21</td>
<td>No</td>
<td>Spanish 22 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>5, 4</td>
<td>UCM</td>
<td>3B</td>
<td>Spanish 24</td>
<td>No</td>
<td>Spanish 100 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Literature</td>
<td>3</td>
<td>UCM</td>
<td>3B</td>
<td>Spanish 23</td>
<td>No</td>
<td>Spanish 24 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Spanish Literature and Culture</td>
<td>5, 4</td>
<td>UCM</td>
<td>3B</td>
<td>Spanish 24</td>
<td>No</td>
<td>Spanish 100 or consult w/advisor</td>
<td>-</td>
</tr>
<tr>
<td>Statistics</td>
<td>5, 4</td>
<td>UCM</td>
<td>2A</td>
<td>Statistics 13</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
<td>UCM</td>
<td>2A</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Comment explanation: *b* indicates that the AP score is transferable for a unit maximum, subject to fulfilling prerequisites.
### College Board Advanced Placement (AP) Examination Credit

<table>
<thead>
<tr>
<th>Examination 1</th>
<th>Score</th>
<th>Credit Toward Degree</th>
<th>UC Transfer</th>
<th>IGETC Area 2</th>
<th>UC Davis Course Equivalencies</th>
<th>Duplicate Credit Allowance 4</th>
<th>Continuing UC Davis Course</th>
<th>Comment *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studio Art [Drawing Portfolio]</td>
<td>5, 4</td>
<td>A*</td>
<td>–</td>
<td>–</td>
<td>Art Studio 2</td>
<td>No</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Studio Art [Drawing Portfolio]</td>
<td>3</td>
<td>A*</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Studio Art [2D Design Portfolio]</td>
<td>5, 4</td>
<td>A*</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>United States Government and Politics</td>
<td>5, 4, 3</td>
<td>A-B</td>
<td>UC-B</td>
<td>4H</td>
<td>Political Science 1**</td>
<td>No</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>United States History</td>
<td>5, 4, 3</td>
<td>B</td>
<td>UC-B / H</td>
<td>3B or 4F</td>
<td>History 17A, 17B</td>
<td>Yes</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>World History</td>
<td>5, 4, 3</td>
<td>B</td>
<td>UC-B / H</td>
<td>3B or 4F</td>
<td>History 17A, 17B</td>
<td>Yes</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*Note: This is not a comprehensive list as new tests are possible. If your exam is not listed, it will be determined in consultation with an advisor.*

* Examinations:
  - AP test administered for discontinued exams:
    - May 2017 – Computer Science AB, French Literature, Italian, Latin Literature
    - May 2014 – French Language, German Literature
    - May 2012 – Spanish Literature, Latin (Weg)  
    - May 2013 – Spanish Language
    - May 2014 – Physics B

* UC Transfer Admissions Eligibility Areas:
  - UCBA Behavioral and Social Sciences, UCBE English, UCEH Humanities, UCAMath, UCBiological and Physical Sciences
  - UCE: If English AP exam scores of 3, 4, 5 was achieved prior to completing any transferable English composition course, 8 quarter units of transfer credit are awarded for the AP exam, and one of two English Composition requirements (UCBA) satisfied. UC Davis articulates AP English Language and Composition, and English Literature and Composition, with scores of 4 or 5 as UWP 1 and English 3. Therefore we will not allow transfer credit for any duplicated AP courses.
  - See www.waag.org, Help Topics UC Transfer Admissions Eligibility for details re: UC transfer admission course.

* IGETC Area:
  - This AP exam may be applied to one IGETC area as satisfying one course requirement, with the exception of Language other than English (IGETC 8).
  - AP equivalent for the Area 4 – Critical Thinking/Composition requirement.

* For details regarding IGETC certification, see your California community college advisor and www.waag.org, Help Topics: IGETC.

---

**College of Arts and Humanities:**

### UC Davis Pattern of General Education:

- All courses must be completed with a grade of C- or better.
- The core curriculum must be completed within the time frame specified in the catalog in which you first enrolled.
- At least 60 quarter units must be completed at UC Davis.
- At least 30 quarter units must be completed in residence at UC Davis.

---

**UC Davis College Area Requirements:**

- UC Davis offers a comprehensive pattern of general education requirements that are consistent with the state's General Education Requirements (GER) and the California State University's General Education Breadth Requirements (GEB).
- The pattern of general education requirements at UC Davis includes the following areas:
  - Natural and Physical Sciences
  - Mathematical and Quantitative Reasoning
  - Social Sciences
  - Humanities and Arts
  - Communication and Critical Thinking
  - Cultural and Historical Understanding
  - Scientific Understanding

---

**Comment:**

- UC Transfer Admissions Eligibility Area:
  - UC Davis College Area Requirements:
    - At least 60 quarter units must be completed at UC Davis.
    - At least 30 quarter units must be completed in residence at UC Davis.

---

**Terminology:**

UC Transfer Admissions Eligibility Area refers to the specific requirements and conditions that must be met for admission to UC Davis. This area includes a combination of coursework and/or exam scores that meet the eligibility criteria for admission to the university. The General Education Requirement (GER) is a set of core curriculum courses that are required for all UC Davis students. The pattern of general education requirements at UC Davis includes the following areas:

- Natural and Physical Sciences
- Mathematical and Quantitative Reasoning
- Social Sciences
- Humanities and Arts
- Communication and Critical Thinking
- Cultural and Historical Understanding
- Scientific Understanding

For more information, please refer to the UC Davis catalog or contact the UC Davis Office of Undergraduate Admissions.
Agricultural Systems and Environment

Changes to the Agricultural Systems and Environment Minor Requirements

Minor Program Requirements:

**Agricultural Systems and Environment** ........................................... 18-20

Preparatory material: Course in statistics such as Statistics 13, 32, 100, Plant Sciences 120, Sociology 46B or equivalent. Course in plant science such as Plant Sciences 2, completion of Biological Sciences 2A and 2B and 2C also fulfills this requirement.

Select one of the two following tracks:

- **Sustainable Agriculture track**
  - Plant Sciences 150 ........................................ 4
  - Soil Science 100 .................................. 5
  - Plant Sciences 105 or 176 or Entomology 110 ................. 3-5
  - Minimum of six units from the following:
  - Range and Natural Resources track
  - Plant Sciences 130 ............................... 3
  - Minimum of six units from the following:
    - Plant Sciences 112, 131, 135, 150, 163, Environmental Science and Policy 123, 172, Wildlife, Fish and Conservation Biology 110, 151

**Minor Advisers.** T. Gradziel (Plant Sciences)

Advising Center is located in 1220A Plant and Environmental Sciences 530-732-1715.

Animal Science

Changes to the Animal Science Major Requirements

**B.S. Major Requirements:**

**Preparatory Subject Matter** ................................................... 53-57

Animal Science 1, 2, 41, 41L .......................................................... 12

Biological Sciences 2A, 2B, 2C ....................................................... 15

Chemistry 2A, 2B, 2C, 8A, 8B or 118A, 118B ........................................ 16-18

Mathematics 16A, 16B or 17A, 17B or 21A, 21B ................................ 6-8

Plant Sciences 120 or Statistics 100 .............................................. 4

Note: Some professional and graduate schools may require additional preparatory subject matter. Please consult the advising center.

**Depth Subject Matter** ......................................................... 39-43

Biology: Biological Sciences 101, Animal Genetics 107, Animal Biology 102, 103, Neurobiology, Pharmacology, and Behavior 101 .................................................. 24

Integrative Animal Biology: Animal Science 123, 124, and Neurobiology, Pharmacology, and Behavior 121 and 121L .............................................. 13

Laboratory: Select one from the following:

Animal Genetics 111; Animal Science 106, 136, or 137; Microbiology 102L; Molecular and Cellular Biology 120L or 60L; Neurobiology, Pharmacology, and Behavior 101L or 104L; Pathology, Microbiology, and Immunology 126L .............................................. 2-6

**Area of Specialization** ......................................................... 20-23

Choose one area of specialization below; the program of study must be approved in advance by your faculty adviser. Courses must be taken for a letter grade.

- Animal Science with a Disciplinary Focus ............................. 20
  - Select 20 upper division units, with approval from your faculty adviser, to form a coherent series of courses in one of the following disciplines: animal behavior, biochemistry, genetics, nutrition, or physiology.

Aquatic Animal Science ............................................................. 20

Animal Science 18 and 131, Nutrition 124; and Animal Science 118 or 119.

Select additional upper division units from any Animal Genetics, Animal Science course, or other courses approved by your faculty adviser. Students in this specialization must take Animal Science 136 and 137 to meet their Laboratory Depth Subject Matter requirement.

Students in this specialization may elect to substitute any of Biological Sciences 104, Evolution and Ecology 112, or Wildlife, Fish, and Conservation Biology 120 and 121 for the 12-unit requirement under Integrative Animal Biology, with approval of your faculty adviser.

Avian Sciences ................................................................. 20

Avian Sciences 13, 100, 150; Nutrition 123, 123L.

Select additional upper division units from any Animal Genetics, Animal Science, or Avian Sciences courses or other courses approved by your faculty adviser. Students in this specialization must substitute Avian Sciences 103, 121, and Neurobiology, Physiology, and Behavior 117 for the Animal Science 124 and Neurobiology, Physiology, and Behavior 121 and 121L requirement under Integrative Animal Biology.

Companion and Captive Animals .......................................... 20

Animal Science 42, 142; Nutrition 115 or 122 or 123 and 123L; Animal Science 170. Select additional upper division units from any Animal Genetics, Animal Science or Avian Sciences course, or from Nutrition 115, 122, 123, 123L or other courses.

Equine Science ............................................................. 20

Animal Science 15, 115, 141 and one of Animal Science 125, 126 or 127.

Select additional upper division units from any Animal Genetics or Animal Science course, or from Nutrition 115, 122, 123, 123L or other courses approved by your faculty adviser.

Laboratory Animals .............................................................. 23

Animal Science 142, 103, 140; Nutrition 123, 123L; Animal Science 104 or Neurobiology, Physiology, and Behavior 102; and Anatomy, Physiology and Cell Biology 103 or Neurobiology, Physiology, and Behavior 123.

Livestock and Dairy .............................................................. 20

Select two of Animal Science 143, 144, 146; Animal Science 145 or 147; Nutrition 115.

Select additional upper division units from any Animal Genetics, Animal Science or Avian Sciences course, or from Nutrition 122, 123, 123L or other courses approved by your faculty adviser.

Poultry ................................................................. 20

Avian Sciences 13, 100, 150; Animal Science 143; Avian Sciences 149 or Food Science and Technology 121; Nutrition 123, 123L.

Select additional upper division units from any Animal Genetics, Animal Science, Avian Sciences, or other courses approved by your faculty adviser. Students in this specialization must substitute Avian Sciences 103, 121, and Neurobiology, Physiology, and Behavior 117 for the Animal Science 124 and Neurobiology, Physiology, and Behavior 121 and 121L requirement under Integrative Animal Biology.

**Total Units for the Major** ................................................. 112-125

Anthropology

Changes to the Anthropology Major & Minor Requirements

**A.B. Major Requirements:**

**Preparatory Subject Matter** ................................................. 19-21

Anthropology 1, 2, 3 ......................................................... 12

Anthropology 15, 23, 24, 25, 28, 30, or 54 ................................. 4-5

Anthropology 13, Sociology 46B, or Statistics 13, 32, 100 or 102

**Depth Subject Matter** ....................................................... 42-47

Two courses from: Anthropology 101, 102, 103, 105, 122A, 128A, 154A, 154B, 158, 178 ......................................................... 7-9

Anthropology 153, 157, or 159 .............................................. 3-5

Anthropology 151 or 152 ....................................................... 4-5

One course from: Anthropology 170, 171, 172, 173, 176, 180, 184 or 185 .............................................. 4

One course from: sociocultural track in consultation with evolutionary track undergraduate adviser .................................... 4

Select 20 additional units from any upper division evolutionary track Anthropology courses (see list below) chosen in consultation with an evolutionary track undergraduate adviser .............................................. 20

**Total Units for the Major** ................................................. 61-68

Note: Evolutionary track courses at the upper division level are courses 101, 102, 103, 105, 122A, 128A, and 151 to 185

**Sociocultural Track:**

**Preparatory Subject Matter** ................................................. 20-22

Anthropology 2 ............................................................. 4

Two courses from: Anthropology 1, 3, or 4 ..................................................... 8

Select one of the following: (1) Two additional quarters of the foreign language used to meet the L&S language requirement .............................................. 8-10

(2) Two additional lower division sociocultural track courses .............................................. 8-10

**Depth Subject Matter** ....................................................... 42-46

Anthropology 100 ............................................................. 4

Two upper division area-focus sociocultural track courses from the following: Anthropology 140A, 140B, 141C, 142, 143A, 144, 145, 146N, 148A, 149A, 149B ......................................................... 18

Select one of the following two options and consult with, and only after prior written approval of, sociocultural track undergraduate adviser (see list below identifying upper division sociocultural; see list above identifying evolutionary track courses):

(1) Eight additional upper division anthropology courses (two courses may be in the evolutionary track; and up to six units can be Anthropology 192 internship units) .............................................. 30-34

(2) Eight additional upper division courses that may combine six sociocultural track courses and either 8 units of Study Abroad credit or two related courses in a single academic discipline (including but not limited to: African American and African American Studies, Asian American, etc.)

**Total Units for the Major** ................................................. 61-68

Note: Evolutionary track courses at the upper division level are courses 101, 102, 103, 105, 122A, 128A, and 151 to 185

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum
Two courses from: Anthropology 100 through 139BN, excluding 101, 103, 105, 128A, and 141B. 8

Archaeology emphasis .......................... 20-25

Anthropology 170 ............................... 4

Two courses from: Anthropology 172, 173, 174 175, 176, 177, 178........ 8

Two courses from: Anthropology 153A, 156B, 156E, 171, 180, 181, 182, 183, 184, 185 .................. 8-13

Evolutionary emphasis .......................... 18-30

Any five upper division Evolutionary

Anthropology courses chosen in consultation

with an evolutionary track adviser.

Sociocultural emphasis .......................... 19-21

Anthropology 100 ............................... 4

One upper division area-focus sociocultural

track course that refers in its title to one or

more peoples or regions of the world.

Two courses from: Anthropology 102

through 139BN, excluding 103, 105, and

128A .............................................. 8

One additional upper division Anthropology

course chosen in consultation with social

cultural track undergraduate

adviser ............................................. 3-5

Minor Advisers. Consult Department office

in 1282 Social Sciences & Humanities.

Arab Studies

New minor in Arab Studies

(College of Letters & Science)

The minor in Arab Studies covers an area of

mi

unfamiliar cultural, economic and geopolitical

ificance.

Several key contemporary issues make the

region as a whole a focus of interest for

scholarly study. The Arab Studies minor is an interdisciplinary

minor open to undergraduates in all four colleges.

Minor Program Requirements:

UNITS

India & South Asia Studies .......................... 20-24

Middle East/South Asia 100 .......................... 4

Middle East/South Asia 180 .......................... 4

Choose one from: History 193A or History

193B.............................................. 4

Choose one from: Middle East/South Asia

181C or 182C ..................................... 4

Additional Electives from Core Course list

(below) ........................................... 4-8

Core Course List:

Middle East/South Asia 111A, 121A/ARB

140, 122A, 150/ Women’s Studies 185, 181C, 182C, Anthropology 142; Arabic

1/1A, 2, 3, 21, 22, 23, 121, 122, 123,

198; Art History 155; Comparative

Literature 155, 166; History 6, 102

R, 112 C, 112 F, 190A, 190B, 190C,

193A, 193B; Political Science 135, 136,

Religious Studies 60, 65C, 160, 161, 162,


With prior consultation with an advisor, students

may petition in advance the Program Committee to

accept other elective courses toward the minor

program if the content is 50% or more on the

Arab World. Under no circumstances may more than

one lower division course be offered in satisfaction of

requirements for the minor.

With prior consultation with an advisor, students

may petition the Program Committee to accept more than

four units of Middle East/South Asia 181C and/or

Middle East/South Asia 182C toward the minor.

Asian American Studies

Changes to the Asian American Studies Program

Program Office, 3102 Hart Hall

530-752-2069; http://asa.ucsdavis.edu

A.B. Major Requirements:

Preparatory Subject Matter ......................... 32

Asian American Studies 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

At least two lower division courses from the following departments or programs:

At least two lower division courses from the following departments or programs:

American Studies (AMS), Chicana/o Studies (ChI), Middle East and South Asia Studies (ME/SA), Native American Studies (NAS), Women and Gender Studies (WGS)

The lower division courses of at least 4 units are acceptable except those numbered 92T, 96T, 99T, and 990; .......................... 8

Methodology ........................................... 8

At least two courses from any of the following methods courses:

African American and African Studies 101; American Studies 100; Anthropology 13; Art History 5, 100 Art Studio 10, 30, Chicana/o Studies 23, English 42, 110A, 110B; History 101; Human Development 120; Native American Studies 46;
Depth Subject Matter ................................ 36

Asian American Studies 192 Community Internship (required) ........... 4

Major Emphasis
As part of the depth subject matter requirement, all Asian American Studies majors must develop a major emphasis by choosing either a disciplinary or thematic specialization in consultation with the Student Affairs Officer (SAO) and/or faculty advisors. The major emphasis must include six Asian American Studies upper-division courses and two upper-division elective courses from other departments or programs. At least six upper-division Asian American Studies courses .............. 24


Up to six units in Asian American Studies 198 and or Asian American Studies 199 can be used to satisfy the Asian American Studies upper division requirements. At least two upper-division elective courses from other departments or programs that relate to chosen emphasis ................. 8

Two courses (of up to eight units) from Study Abroad can be substituted for major requirements upon approval from the SAO or faculty advisor.

Total Units for the Major ........................ 68

Major Advisor, Brit Sumida, Student Affairs Officer (SAO), 530722-4447 or
bnsumida@ucdavis.edu

Biochemistry and Molecular Biology

Changes to the Biochemistry and Molecular Biology Major

B.S. Major Requirements:

Preparatory Subject Matter ................. 50-57

Biological Sciences 2A-2B-2C .............. 15
Chemistry 2A-2B-2C or 2AH-2BH-2CH ..... 15
Mathematics 117/17B-17C or 21A-21B (21C recommended) ................. 8-12
Physics 7A-7B-7C or 9A-9B-9C ........... 12-15

Depth Subject Matter .......................... 57-68

Biological Sciences 101, 102, 103, 104, 13
Chemistry 107A-107B or 110A-110B-110C or 121A-121B-121C, 123, 124, 128, 130A & 130B ........... 16
Statistics 100 or 130A & 130B ............. 4-8
Restricted Electives ........................... 6

Six units of course courses in biological sciences or chemistry relevant to the student's interest chosen in consultation with the adviser. Students are encouraged to obtain approval from the SAO before enrollment.

Changes to the Biochemistry and Molecular Biology Major

Preparatory Subject Matter ................. 50-57

Biological Sciences 2A-2B-2C .............. 15
Chemistry 2A-2B-2C or 2AH-2BH-2CH ..... 15
Mathematics 117/17B-17C or 21A-21B (21C recommended) ................. 8-12
Physics 7A-7B-7C or 9A-9B-9C ........... 12-15

Restricted Electives ........................... 6

Six units of course courses in biological sciences or chemistry relevant to the student's interest chosen in consultation with the adviser. Students are encouraged to obtain approval from the SAO before enrollment.

Total Units for the Major ...................... 77-94

Biological Sciences

Changes to the Biological Sciences Major

A.B. Major Requirements:

Preparatory Subject Matter ................. 39-52

Biological Sciences 2A-2B-2C .............. 14
Chemistry 2A-2B-2C or 2AH-2BH-2CH ..... 15

Upper division course work must include a total of six units in Asian American Studies upper division courses and one course from: Molecular and Cellular Biology 150, Neurobiology, Physiology, and Behavior 100, 101, 102, 141, 142; Plant Physiology or Development; one course from: Plant Biology 100, 101, 102, 112, 113, 116** .... 3-5

Laboratory Requirement: Select course(s) for a minimum total of 6 hours/week of laboratory or field work from the list of courses below. Course(s) selected to fulfill the laboratory requirement may also satisfy restricted elective or depth subject matter requirements (but not both).

Restricted electives ........................... 11

Select 3 or more courses from the list of Approved Biological Sciences Restricted Electives not used to satisfy Depth Subject Matter requirements above and laboratory courses (below) for a minimum of 11 units. Students may choose courses following a self-directed theme from their academic or career objectives, or choose courses from a list of sample themes available on the BASC website at http://basc.ucdavis.edu

Up to 3 of the 11 units may be fulfilled by approved seminar or research courses**.

Total Units for the Major ...................... 98-117

Approved Biological Sciences

Restricted Electives

Animal Genetics 105, 107
Animal Science 104, 112, 131, 132, 140, 141, 142, 170
Anthropology 129, 151, 152, 153, 154A, 154B, 157
AVG Sciences 100, 150

Biological Sciences all upper division courses
Changes to the Biotechnology Major

Changes to the Biotechnology Major Animal Biotechnology Option ...........37-45

Microbiology 101, Animal Genetics 111, Neurobiology, Physiology, and Behavior 101, Molecular and Cellular Biology 150 or 163, 182, Animal Science 170, Biochemistry: Biological Sciences 105; or Biological Sciences 102 and 103; or Animal Biology 102 and 103..................27-35

Restricted Electives .......................10

Select at least one course from each of the following areas:

(a) Animal Cell Biology/Microbiology/
Immunology: Biological Sciences 183, Biotechnology 150, 161A, 161B, 188, Evolution and Ecology 100, Medical Microbiology 188, Microbiology 115, 162, Molecular and Cellular Biology 120L, 160L, Pathology, Microbiology, and Immunology 126, 126L, 127, 128, Molecular, Cellular, and Integrative Physiology 200L, Neurobiology, Physiology, and Behavior 132, Plant Pathology 140

(b) Animal Reproduction and Breeding: Animal Genetics 107, Animal Science 131, 140, Avian Sciences 121, Biological Sciences 181, Evolution and Ecology 102, Molecular and Cellular Biology 164, Neurobiology, Physiology, and Behavior 121, 121L, Plant Pathology 140

Bioinformatics Option .....................38-45

Biological Sciences 180L, Biological Sciences 181 or 183, Microbiology 101, Engineering: Computer Science 20, 30, Engineering: Computer Science 124 or 129, Molecular and Cellular Biology 182, Biochemistry: Biological Sciences 105; or Biological Sciences 102 and 103; or Animal Biology 102 and 103........13-38

Restricted Electives .......................7


Cinema and Technocultural Studies

Effective Fall 2015, the Technocultural Studies Major has been renamed Cinema and Digital Media.

The Cinema and Digital Media Major Program

The Cinema and Digital Media (CDM) program combines the study of audiovisual and digital media, theories about such media, and the relevant modes of artistic practice and production. CDM integrates the analysis of audiovisual and digital texts with their theoretical underpinnings and their methods of production. The program also addresses the particular impact that technology has on culture in its many forms and fields.

CDM faculty teach and research on various histories, theories, and practices of media. Current fields for teaching and research in cinema and digital media include the history and analysis of film and video, film and video production, electronic music, digital content creation and design, the digital arts, community media and activism, computer graphics, animation, and new media—as well as the theories and politics of these various areas.

The Program

Preparatory course work involves a solid introduction to the history, ideas and current trends in cinema and digital media. For depth subject matter, students in the major select a combination of critical studies and creative production courses. Two courses will be selected from the following: (a) two from the theory/history distribution and four from the production/programming distribution, (b) four from the production/programming distribution and two from the theory/history distribution. The major requires at least 16 units from the lists above for a total of at least 16 units.

Preparatory Subject Matter ...............35

Choose two courses from the following: Cinema and Technocultural Studies 116, 117, 144A, 144B, 144C; Cinema and Technocultural Studies 150, 151, 152, 154, 156; Science and Technology Studies 151, 152, 155, 158, 159; Sociology 154

Restricted Electives .......................8

Plus four additional courses chosen from the list of courses above for a total of at least 16 units.

Total Units for the Major ...............62-63

Major Adviser, see Advising Office.

Chemistry

Changes to the Chemistry Major

Chemistry

Preparatory Subject Matter ...............53

Chemistry 2A-2B-2C or 2AH-2BH-2CH............15

Physics 9A, 9B, 9C..................................15

Mathematics 21A, 21B, 21C, 21D, 22A, 22AL, 22B..................................23

Depth Subject Matter .....................54


At least four additional upper-division units in chemistry (except Chemistry 107A, 107B).............................4

Total Units for the Major ...............107

Recommended

Physics 9D

Pre-Fall 2011 General Education (GE): AH—Arts and Humanities; SC—Science and Engineering; SS—Social Sciences; Div—Diverse Diversity; WR—Writing Experience

AGCH=American Cultures; DD=Diverse Diversity; OL=Oral Skills; QL—Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience
Changes to the Classics Major

The Major Program
Classical Civilization is an interdisciplinary major that examines the ancient Mediterranean cultures of Greece, Rome, and the Near East, with courses offered on the languages, history, literature, religions, myths, art and archaeology of these societies, their achievements in rhetoric and philosophy, and their political and social institutions. Minor programs in Classical Civilization, Greek, and Latin, and many General Education courses are offered also.

The Program. The major has two tracks: (1) Classical and Mediterranean Civilizations, and (2) Classical Languages and Literature. The core of both major tracks consists of two years of Latin or Greek, the introductory sequence on the ancient Mediterranean world (Classics 1, 2, 3), the advanced seminar (Classics 190), and a number of electives. The Classical and Mediterranean Civilization track allows students to choose their electives from a broadly balanced program in history, art, and archaeology, literature, philosophy and rhetoric. The Classical Languages and Literature track focuses more intensively on language and literature, requiring the study of two languages and allowing fewer electives. Students planning to go on to graduate work in Classics should take Track 2 and study as much Latin and Greek as possible. They should make a point of talking to an advisor early in their undergraduate program and graduate study also advised to acquire a reading knowledge of French or German.

Career Opportunities. A degree in Classical Civilization represents a solid liberal arts education that provides an excellent foundation for a wide variety of careers. In the last twenty-five years, many majors have applied to law or medical schools and nearly all have been accepted. Additional career options include library and museum work, teaching, journalism, and graduate study in Classics, art, archaeology, history, literature, philosophy, and religion.

Classical Civilization

A. B. Major Requirements: 

Classical and Mediterranean Civilizations track

Preparatory Subject Matter ............. 26-27
Latin 1-2-3, or Greek 1-2-3 ............... 15
Two courses from: Classics 1, 2, 3 .......... 8
One additional course from: Art History 1A; Classics courses 1 through 50; Comparative Literature 1; Philosophy 21; Religious Studies 21, 40 .......... 4

Depth Subject Matter ................. 40
Upper division courses in Latin or Greek .... 12
Classics 190 .......... 4
Six additional courses selected from at least three of the following groups .... 24
Of these 24 units, at least 12 must be in Latin, Greek, or Classics.
(a) Literature and Rhetoric: Additional upper division courses in Latin, Greek and Hebrew: Classics 102, 110, 140, 141, 142, 143
(b) History: History 102A, 111A, 111B, 111C, Religious Studies 102, 125
(c) Art and Archaeology: Classics 171, 172A, 172B, 173, 174, 175
(d) Philosophy and Religion: Classics 141, 150; Philosophy 143, 160, 161, 162; Political Science 118A; Religious Studies 141A, 141B, 141C

Depth Subject Matter ................. 36
Six upper division courses in the two chosen languages, with at least two courses in each language .... 24
Classics 190 .......... 4
Two additional courses selected from any of the following groups .... 8
(a) Literature and Rhetoric: Additional upper division courses in Latin or Greek; Classics 102, 110, 140, 141, 142, 143
(b) History: History 102A, 111A, 111B, 111C; Religious Studies 102, 125
(c) Art and Archaeology: Classics 171, 172A, 172B, 173, 174, 175
(d) Philosophy and Religion: Classics 141, 150; Philosophy 143, 160, 161, 162; Political Science 118A; Religious Studies 141A, 141B, 141C

Total Units for the Major ............. 66-67
Classical Languages and Literatures track

Preparatory Subject Matter ............. 34
Latin 1-2-3 and Greek 1-2-3 .......... 30
Classics 1, 2, or 3 .......... 4

Depth Subject Matter ................. 36
Six upper division courses in the two chosen languages, with at least two courses in each language .... 24
Classics 190 .......... 4
Two additional courses selected from any of the following groups .... 8
(a) Literature and Rhetoric: Additional upper division courses in Latin or Greek; Classics 102, 110, 140, 141, 142, 143
(b) History: History 102A, 111A, 111B, 111C; Religious Studies 102, 125
(c) Art and Archaeology: Classics 171, 172A, 172B, 173, 174, 175
(d) Philosophy and Religion: Classics 141, 150; Philosophy 143, 160, 161, 162; Political Science 118A; Religious Studies 141A, 141B, 141C

New Cognitive Science Major

Program Office. 1240 Social Sciences and Humanities Building; 530-752-0703; http://cogsci.ucdavis.edu/

The Major Programs

The Cognitive Science major is designed to provide a broad interdisciplinary approach to the study of mind that includes courses from different departments and attracts students with a variety of interests. It emphasizes a multi-faceted approach to the study of mind that integrates concepts and techniques from psychology, artificial intelligence, linguistics, neurology, philosophy and other relevant fields.

For students interested in the liberal arts the Cognitive Science major can be pursued as a Bachelor of Arts (A.B.) program. Alternatively, it can be pursued as a Bachelor of Science (B.S.) program for students with a stronger interest in the mathematical, neurological and computational foundations of the discipline. The main objective of both programs is to give the student a broad grounding in the integrated sciences of the mind and to connect approaches from different fields. Students must complete a number of core courses for the degree, as well as a number of specialty courses on such wide-ranging topics as logic for artificial intelligence, computational linguistics, cognitive neuroscience, animal cognition and the psychology of music.

Career Alternatives. A degree in cognitive science provides broad intellectual foundations useful for careers in a variety of areas, including teaching, business, social work/counseling and the information technology industry. An undergraduate education in cognitive science also prepares the student for graduate study in appropriate subfields of psychology, linguistics, philosophy and informatics. It is also suitable training for pre-medicine, pre-law, and pre-management students.

A. B. Major Requirements:

Preparatory Subject Matter ............. 28
Linguistics 1 .......... 4
Philosophy 10 .......... 4
Philosophy 13+13G .......... 4
Psychology 1 .......... 4
Psychology 41 .......... 4
Statistics 13 .......... 4
Psychology 12 .......... 4

Depth Subject Matter ................. 44
All courses from group A .......... 12
Group A: Core
One 4-unit upper division course in cognitive science, Psychology 101, Philosophy 112
One course from group B .......... 4
Group B: Computation
Linguistics 177, Philosophy 133
A further sixteen units from two of groups B-F ........ 16
Group C: Neuroscience
Psychology 121, 135
Group D: Linguistics
Linguistics 103A, 103B, 131, 141, 171, 173
Group E: Philosophy
Philosophy 103, 104, 136
Group F: Psychology
Psychology 100, 127, 130, 131, 132, 136, 140, 141
Twelve additional units from groups B-G .......... 12
Group G: Other

Total Units for the Major ............. 72

B. S. Major Requirements:

Preparatory Subject Matter ............. 60
Engineering Computer Science 20, 30, 40, 50, 60 .......... 20
Linguistics 1 .......... 4
Mathematics 17AB or 21AB .......... 8
Mathematics 22A+22AL .......... 10
Physics 10 .......... 4
Physics 12 .......... 4
Physics 13+13G .......... 4
Psychology 001 .......... 4
Psychology 041 .......... 4
Statistics 13 or STA 102 .......... 4

Depth Subject Matter ................. 48
All courses from group A .......... 12
The emphasis in the program reflects the changing organizational and societal levels of analysis are offered. Communication at the individual, interpersonal, organizational, and public levels is addressed through such topics as communication and cognition, message systems, interpersonal communication, nonverbal communication, persuasion, organizational communication, mass media effects, computer-mediated communication and public communication campaigns explore communication at these levels of analysis. Related social science courses are also part of the major.

**Career Alternatives.** Communication graduates have found careers in such fields as broadcast and print journalism, administration, sales, management, politics and government, education, social work, and public relations. A Communication degree is also excellent preparation for law school or other graduate programs.

**A.B. Major Requirements:**

**Preparatory Subject Matter**

- Anthropology 1 or Psychology 1
- Economics 1A or 1B
- Psychology 1
- Sociology 1
- Statistics 13 or Sociology 468

**Depth Subject Matter**


**Total Units for the Major**

- 69-70

**B.S. Major Requirements:**

- Anthropology 1 or Psychology 1
- Economics 1A or 1B
- Psychology 1
- Sociology 1
- Statistics 13 or Sociology 468

**Depth Subject Matter**


**Total Units for the Major**

- 69-70

**Grading recommendation.** Although not required, it is recommended that all courses offered in satisfaction of the major, except variable-unit courses, be taken for grades.

**Community and Regional Development Major**

- Community and Regional Development 118, 140, 141, 162, or International Agricultural Development 100
- Political Processes and Community Change: Two courses from: Community and Regional Development 147, 149, 154, 157, 158, or 171
- Methods for Community Research: Community and Regional Development 151 or 156
- One course from: Education 114, Landscape and Architecture 150, Sociology 103, 106, Statistics 102, American Studies 100 or Communication 102
- Internship: Community and Regional Development 192

**Areas of Specialization**

- Take 20 units from each of two options, including at least one Community and Regional Development course from each option, or 40 units from one option, including at least two Community and Regional Development courses. These courses cannot overlap with the depth subject. Up to 4 units of variable-unit course work may be counted toward this requirement, e.g., community and Regional Development 192.

**Global Communities Option**

- Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.

Gender and Development: Sociology 132, 145A, 145B, Women and Gender Studies 102, 182

Globalization and Politics: Political Science 124, 130, 131, 175

Experiential Learning, Area Studies, and Language: Total number of units of credit in Experiential learning, Area Studies, and Language courses cannot exceed 32.

Up to 12 credits transferred from any accredited foreign program or foreign internship, including UCD EAP and Summer Abroad programs.

Up to 12 credits in regional area studies classes; e.g., Middle East, China, Latin America

Up to 12 credits for foreign Language.

Organization and Management Option

Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.

Administration: Community and Regional Development 157, 158, 194HA and 194HB, Agricultural and Resource Economics 100A, 171A, Economics 115A, Political Science 100, 105, 142A, 142B, 142C, 155, 183

Communication: Communication 134, 136, 140, 152, Community and Regional Development 147, 176, Education 120, 163

Human Resources: Community and Regional Development 151, 172, 176, Economics 151B, Sociology 120, 126, 129


Policy, Planning, and Social Services Option

Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.


Psychology 123, 126, 151, 154, 162, 168, Sociology 154

Education and Community Education: Agricultural Education 100, 160, Communication 146, Education 100, 105, 110, 111, 151, 152, 153, Psychology 100, 132, Sociology 124


Family and Community: American Studies 152, Community and Regional Development 147, Human Development 100A, 100B, 100C, 101, 102, 103, 110, 130, 140, 141, 143, 160, 161, 163, Psychology 140, Sociology 122, 131, 134, 135, 152

Three courses in English Composition from the following list:

English 3, University Writing Program 1, 18, 19, 101, 102A, 102B, 102D, 102E, 102F, 102G, 102H, 102J, 102K, 104A, 104B, 104C, 104D, 104E, 104F, 104I, Communication 1, Comparative Literature 1, 2, 3, 4, or Native American Studies 5.

At least one course must be selected from:

University Writing Program 101, 102AH, 104AF.

The Upper Division Composition Exam does not satisfy the requirement.

Advanced Placement English score of 4 or 5 which satisfies English 3 and/or University Writing Program 1 will satisfy one of the three required courses.

Total Units for Major…………………… 110-121

Major Adviser. M. Kenney

Advising Center for the major is located in 1303 Hart Hall 535-3281.

Honors Program. An Honors Program available to Human and Community Development majors who have demonstrated excellence in their field of study. Entrance into the honors program requires that a student have completed at least 135 units with a minimum grade point average of 3.500 in upper division courses counted toward the major. The program consists of a project whose specific nature is determined by consultation with the student's Honors Adviser. It may involve completion of a research project, a scholarly paper, a senior thesis, or some comparable assignment. The project will have a minimum duration of two quarters and will be noted on the student's record by a variable unit course number or special honors course designation. Successful completion of the honors program requires that a minimum of eight (8) units of credit be earned in course work for the project. It is expected that a student participating in the Honors Program of the Community Studies and Development will participate in the Undergraduate Research, Scholarship and Creative Activities Conference. Additionally, students participating in the Honors Program will be required to give a public presentation of their work in a departmental seminar or program.

Honors Program Adviser. Frank Hirtz, fhirtz@ucdavis.edu

Minor Program Requirements:

The Community and Regional Development Program (Department of Human Ecology) offers the following minor.

Five courses selected from:

Community and Regional Development 118, 140, 141, 142, 147, 149, 151, 152, 153A, 153B, 153C, 154, 156, 157, 158, 162, 170, 176, 180, 190.

Minor Adviser. M. Kenney

Graduate Study. See Graduate Studies, on page 111.

Design

Changes to the Design Program

The Major Program

The Department of Design offers a creative, challenging, and flexible approach to the study of design with emphasis on socially responsible, human centered, and sustainable practice.

The Program. Foundation courses: Design and Visual Culture; Design Drawing, Form and Color, and Graphic Design and Computer Technology; are required of all design majors. One additional course in the student's area of interest is required for Preparatory Subject Matter. Depth Subject Matter courses provide: (1) further exploration of design principles and conceptual, formal and technical issues; (2) conceptual and critical development through a series of history and theory classes; (3) in-depth studio experience with projects that demonstrate a research-based, iterative design process. Optional capstone class. A more detailed explanation is available through the Design Advising office in 107 Art Building, 530-752-624A.

Portfolios. Portfolios are not required for admission to the major. However, it is highly recommended that design students maintain an updated portfolio of visual work for faculty and professional evaluation and consideration for enrollment in specialized courses, including independent study, group study and internship.

Internships, Careers, and Study Abroad. Design students are encouraged to supplement their coursework with internships in design firms, museums, and design related businesses. Design graduates go directly from this program into further graduate study, or professional work including exhibitions, fashion, interior architecture and product (furniture and lighting), textiles, visual communications (digital, environmental print) and sustainable design. In addition, students have become entrepreneurs through freelance and commissioned work in many related areas. The Department of Design encourages students to experience design abroad through a variety of sponsored programs. For more information, contact UC Davis Study Abroad.

A.B. Major Requirements:

UNITS

Preparatory Subject Matter. .......................... 28

Design 1 .................................................. 4

Art 2 or Design 14 ................................... 4

Design 15 .................................................. 4

Design 16 .................................................. 4

University Writing Program 11, 18 or 19 .... 4

Design 40A, 40B or 40C ................................ 4

One course from the following:

Design 21, 31, 37, 50, 60, 70, 77; Art 9 .......................... 4

Depth Subject Matter .................................. 44

Two courses, at least one of which must be a Design course, from the following: Art 110A, 110B, Design 107, 115, 117, 118B, 150A; Dramatic Art 128; Technocultural Studies 100, 101, 113B, 115C, 152, 154, 164, 166N, 168A, 168B, 171, 172, 173, 179, Political Science 102, 107, 175, Sociology 102, 118, 138, 141, 143A, 143B, 170

Family and Community: American Studies 152, Community and Regional Development 147, Human Development 100A, 100B, 100C, 101, 102, 103, 110, 130, 140,
Earth and Planetary Sciences

Changes to the Earth and Planetary Sciences
(College of Letters and Science)
Louise H. Kellogg, Ph.D., Acting Chairperson of the Department
David A. Osleger, Ph.D., Vice-Chairperson of the Department
Department Office, 2119 Earth and Physical Sciences Building 530-752-0350; http://www.geology.ucdavis.edu

Faculty
Magali I. Billen, Ph.D., Associate Professor
Sandra J. Carlson, Ph.D., Professor
William H. Casey, Ph.D., Professor
Eric S. Cowgill, Ph.D., Associate Professor
Howard W. Day, Ph.D., Professor
Graham E. Fogg, Ph.D., Professor
Tessa M. Hill, Ph.D., Associate Professor
Louise H. Kellogg, Ph.D., Professor
Charles G. Higgins, Ph.D., Professor
James A. Doyle, Ph.D., Professor
Richard Cowen, Ph.D., Senior Lecturer Emeritus
Sandra J. Carlson, Ph.D., Professor
David A. Osleger, Ph.D., Vice-Chairperson of the Department

Changes to the Japanese Major

Chinese

A.B. Major Requirements:

Preparatory Subject Matter: 30

Japanese 1, 2, 3, 4, 5, 6; OR 181, 281, 381; OR 1C1N, 2C1N, 3C1N, OR equivalent as determined by a required language placement exam.

Recommended but NOT required: Chinese 1, 10, 50, Comparative Literature 14, Japanese 109, 110, 111, 112, 113, 114, 120

Depth Subject Matter: 40

Note: With prior approval of the undergraduate adviser, students already proficient in Chinese at any third-year level (111-112-113) must take other upper-division Chinese courses to replace language course(s).

Three courses (at least 12 units) selected from Chinese 100A, 101, 102, 103, 104, 105, 108, 109A, 110, 115, 116, 120**, 130**, 131, 132, 133**, 134, 140**, 150** or any approved substitutions; *one of the three courses must be from Chinese 101, 102, 103, 104, 109G........................12

**Chinese 120, 130, 133, 140 and 150 may be repeated when the contents are different.

Recommended substitutions: Japanese 101, 102, 103, 104, 105, 106, Anthropology 148A or 148B, Art History 163A or 163B, East Asian Studies 113, History 191A-F, Religious Studies 172; or other advanced literature and culture courses selected in consultation with the undergraduate adviser.

Total Units for the Chinese Major: 40-70

Major Advisors in Chinese
X. Chen, C. Chu, M. Halperin, Y. He, M. Yeh

Japanese

A.B. Major Requirements:

Preparatory Subject Matter: 30

Japanese 1, 2, 3, 4, 5, 6 OR equivalent as determined by a language placement exam.

Recommended but NOT required: Japanese 1, 50, Comparative Literature 14, Chinese 10, 11, 50, Linguistics 1, History 98

Depth Subject Matter: 40

Note: With prior approval of the undergraduate adviser, students already proficient in Japanese at any third-year level (111-112-113) must take other upper-division Japanese courses to replace language course(s).

Three courses (at least 12 units) selected from the following: Japanese 104, 105, 106, 107, 108, 109, 114A, 115, 121, 122, 123, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 141, 152, 156, 157, Anthropology 149A, 149B, Art History 164; Chinese (up to two upper-division Chinese courses); Comparative Literature 153; Economics 171; History 191A, 194B, 194C, Political Science 148B; Religious Studies 170, 172; or other advanced literature and culture courses selected in consultation with the undergraduate adviser.

Total Units for the Japanese Major: 40-70


Minor Program Requirements:

Minors are offered in Chinese and in Japanese for students wishing to follow a formally recognized program of study in those languages and literatures.

Languages and Cultures

MINOR

EAST ASIAN LANGUAGES AND CULTURES

Chinese

A.B. Major Requirements:

Preparatory Subject Matter: 30

Chinese 1, 2, 3, 4, 5, 6; OR 181, 281, 381; OR 1C1N, 2C1N, 3C1N, OR equivalent as determined by a required language placement exam.

Recommended but NOT required: Chinese 10, 11, 50, Comparative Literature 14, Japanese 109, 110, 111, 112, 113, 114, 120

Depth Subject Matter: 40

Note: With prior approval of the undergraduate adviser, students already proficient in Chinese at any third-year level (111-112-113) must take other upper-division Chinese courses to replace language course(s).

Three courses (at least 12 units) selected from Chinese 100A, 101, 102, 103, 104, 105, 108, 109A, 110, 115, 116, 120**, 130**, 131, 132, 133**, 134, 140**, 150** or any approved substitutions; *one of the three courses must be from Chinese 101, 102, 103, 104, 109G........................12

**Chinese 120, 130, 133, 140 and 150 may be repeated when the contents are different.

Recommended substitutions: Japanese 101, 102, 103, 104, 105, 106, Anthropology 148A or 148B, Art History 163A or 163B, East Asian Studies 113, History 191A-F, Religious Studies 172; or other advanced literature and culture courses selected in consultation with the undergraduate adviser.

Total Units for the Chinese Major: 40-70

Major Advisors in Chinese
X. Chen, C. Chu, M. Halperin, Y. He, M. Yeh

Japanese

A.B. Major Requirements:

Preparatory Subject Matter: 30

Japanese 1, 2, 3, 4, 5, 6 OR equivalent as determined by a language placement exam.

Recommended but NOT required: Japanese 1, 50, Comparative Literature 14, Chinese 10, 11, 50, Linguistics 1, History 98

Depth Subject Matter: 40

Note: With prior approval of the undergraduate adviser, students already proficient in Japanese at any third-year level (111-112-113) must take other upper-division Japanese courses to replace language course(s).

Three courses (at least 12 units) selected from the following: Japanese 104, 105, 106, 107, 108, 109, 114A, 115, 121, 122, 123, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 141, 152, 156, 157, Anthropology 149A, 149B, Art History 164; Chinese (up to two upper-division Chinese courses); Comparative Literature 153; Economics 171; History 191A, 194B, 194C, Political Science 148B; Religious Studies 170, 172; or other advanced literature and culture courses selected in consultation with the undergraduate adviser.

Total Units for the Japanese Major: 40-70


Engineering: Biological and Agricultural

Changes to the Biological Systems Engineering Undergraduate Program

The Biological Systems Engineering Undergraduate Program

Lower Division Required Courses

Units

Mathematics 21A, 21B, 21C, 22D....................16
Mathematics 22A, 22B..............................6
Physics 9A-9B-9C..................................15
Chemistry 2A-2B................................10
Chemistry 8A or 118A..............................2 or 4
Chemistry 8B or 118B..............................4
Biological Sciences 2A-2B-2C.....................15
Engineering 6, 35, 17..............................12
Biological Systems Engineering 1................4
Biological Systems Engineering 75............4
University-Writing Program 1, 1Y or 1V (grade of C- or better is required).................4
Communication 1 or 3............................4

Upper Division Requirements:

If your career objective is a professional degree in the health sciences (e.g., medicine, veterinary medicine, or dentistry), you should consult with advisers from the appropriate school to plan for successful admission and to ensure that you take specific courses that may be required and that you have the necessary experience. The upper division requirements are listed following the areas of specialization:

• Biotechnology Engineering
• Agricultural and Natural Resources Engineering
• Food Engineering

Pre-Fall 2011 General Catalog Course Supplement and Policies and Requirements Addendum
Areas of Specialization

Biotechnology Engineering. Biotechnology involves the handling and manipulation of living organisms or their components to produce useful products. Students specializing in biotechnical engineering integrate analysis and design with applied biology to solve problems in renewable energy production, large-scale biotechnical production, control of biological systems, and bio-based materials production.

Students may focus on the mechanisms and processes for the sustainable production and use of energy from renewable biological sources. Students may also focus on the challenges in scaling up laboratory developments to industrial production, including production, packaging, and application of biocontrol agents for plant pests and diseases; genetically altered plants; plant materials and food products; and microbial production of biological products, tissue culture, and bioremediation. Students may also focus on the development of biosensors to detect microorganisms and specific substances, useful in the development of products based on biological processes and materials.

Biotechnical engineers work in the biotech industries on design and operation, scale-up, and instrumentation and control.

Recommended biological science electives:
- Biological Sciences 101, 102, 103
- Microbiology 102
- Molecular and Cellular Biology 120
- Plant Biology 113

Recommended engineering electives:
- Biological Systems Engineering 114
- Chemical Engineering 157, 161, 161C, 161L
- Civil and Environmental Engineering 143, 143A, 149, 150, 153
- Engineering 180
- Mechanical Engineering 161, 162, 163


Agricultural and Natural Resources Engineering. With the world population expected to grow over the next several decades, major concerns lie with meeting the needs of agriculture and with the sustainable use of limited natural resources. Students specializing in agricultural and natural resources engineering combine analysis and design with applied biology to solve problems in producing, transporting, and processing biological products leading to food, fiber, energy, pharmaceuticals, and other human needs.

Students may focus on automation of field operations and on the biomechanics of humans and animals. They may also focus on engineering issues related to the sustainable use of natural resources, particularly water, but also land and air.

Agricultural and natural resources engineers design machinery, processes, and systems for productive plant and animal culture, while minimizing adverse environmental effects.

Agricultural and natural resources engineers are employed as practicing professionals and managers with agricultural producers, equipment manufacturers, irrigation districts, food processors, consulting engineering firms, state agencies, and government agencies.

Recommended biological science electives:
- Animal Emphasis
  - Animal Science 118, 131, 136A
  - Applied Biological Systems Technology 163
  - Wildlife, Fish, and Conservation Biology 120, 121

- Biomechanics Emphasis
  - Biological Sciences 102
  - Neurobiology, Physiology and Behavior 101
  - Exercise Biology 103
  - Cell Biology and Human Anatomy 101

- Plant Emphasis
  - Entomology 100
  - Environmental Horticulture 102
  - Environmental Science and Policy 100
  - Environmental Toxicology 101
  - Hydroagriculture 124
  - Microbiology 120
  - Plant Biology 111
  - Soil Science 100
  - Plant Sciences 101, 110A, 114, 142

Recommended engineering electives:
- Biological Systems Engineering 114, 120, 128, 145
- Biomedical Engineering 109, 116, 126
- Civil and Environmental Engineering 140, 141, 142, 144, 145, 148A, 171
- Engineering 111, 121, 180

Additional recommended electives:
- Applied Biological Systems Technology 150, 161, 165


Aquaculture Emphasis
- Animal Science 118, 131, 136A
- Applied Biological Systems Technology 163
- Wildlife, Fish, and Conservation Biology 120, 121

Biological Systems Engineering—Select a minimum of 4 units from all upper division Biological Systems Engineering courses not otherwise required, with the exception of Biological Systems Engineering courses 189, 199

Statistics 100 recommended

Engineering electives—Select a minimum of three units. All upper division courses offered by the College of Engineering may be taken as engineering electives with the exception of the following:
- Civil and Environmental Engineering 123
- Computer Science Engineering 188
- Engineering 103, 160, all courses numbered 190-197 and 199 (except Engineering 190, which may be taken for 2 units of engineering elective credit) …… 3

Biological science electives—All upper-division courses in the College of Biological Sciences (with the exception of Biological Sciences 132, Evolution and Ecology 175, Exercise Biology 102, 112, 115, 118 through 149L, Microbiology 100 and all courses numbered 190-199) may be used as biological science electives. The following courses may also be taken as biological science electives:
- Applied Biological Systems Technology 161
- Animal Science 118, 143, 144, 145, 146, 148A
- Agricultural Management and Rangeland Resources 110A
- Atmospheric Science 133
- Avian Sciences 100
- Cell Biology and Human Anatomy 101, 101L
- Entomology 100
- Environmental Horticulture 102
- Environmental Science and Policy and Management 120, 182, 185 (offered at UC Berkeley)
- Environmental Toxicology 110, 112A, 131, 133, 138
- Food Science Technology 102A, 104L, 119, 120, 121, 128, 159
- Infectious Diseases 141
- Soil Science 100
- Wildlife, Fish, and Conservation Biology 121

Food engineers work as practicing engineers, scientists specializing in food engineering design food processes and operate equipment and facilities for production of high quality, safe, and nutritious food with minimal impact of these operations on the environment.

Students learn to apply engineering principles and concepts to handle, store, process, package, and distribute food and related products. In addition to engineering principles, the food engineering specialization provides an understanding of the chemical, biochemical, microbiological, and physical characteristics of food. Students study concepts of food refrigeration, freezing, thermal processing, drying, and other food operations.

Food engineers work as practicing engineers, scientists, and managers in the food industry.

Recommended biological science electives:
- Biological Sciences 101, 102, 103
- Environmental Science and Policy 110
- Environmental Toxicology 101
- Food Science and Technology 104, 104L, 119, 128
- Plant Sciences 172

Recommended engineering electives:
- Biological Systems Engineering 161
- Chemical Engineering 157
- Mechanical Engineering 171, 172

Suggested Advisers. K. McCarthy, M. McCarthy, M. Niltin, R. Singh, D. Slaughter

Upper Division Required Courses

- Engineering 100, 102, 104 105, 106
- Biological Systems Engineering 103, 125, 127, 130, 163, 170A, 170B, 170B, 170C, 170CL

UNITs 29

Biological Systems Engineering electives—There is a minimum of 4 units from all upper division Biological Systems Engineering courses not otherwise required, with the exception of Biological Systems Engineering courses 189, 199

Energy Minor Programs

There is an urgent need to develop and commercialize technologies for the sustainable conversion and use of energy. The goal of these minors is to prepare students for careers that require training in energy science and technology and energy policy. Clean-tech and green-tech markets including energy are some of the fastest growing markets in the United States. Well-trained individuals in these related fields are needed to provide the level of expertise required to advance technology and policy and to satisfy state, national, and international objectives for greater energy sustainability. The minors are expected to accommodate persons of diverse background with educational interests in areas that may include engineering, science, policy, economics, planning, and management.

Energy Science and Technology Minor

All courses must be taken for a letter grade. Grade of C- or better required for all courses used to satisfy Pre-Fall 2011 General Education (GE) Requirements: Arts & Humanities, Scientific & Engineering, Social Sciences, Diversity, Writing Experience Fall 2011 and on Revised General Education (GE) Requirements: Arts & Humanities, Scientific & Engineering, Social Sciences, American Cultures, World Cultures, Writing Experience Quarter Offered: F--W, W--Winter, Spr--Spring, Su--Summer, 2015/2016 offering in parentheses.
minor requirements with overall GPA in minor requirement courses of 2.00 or better.

Minor Requirements:

**Energy Science and Technology** .......................... 20
- Engineering 105 or Chemical Engineering 152B ...................... 4
- Engineering 188 .................................................. 4
- Select 12 units from: Biological Systems Engineering 146, 158BC, 161A, 161B, 161L, 166; Civil Engineering 125, 143, 162, 163; Mechanical Engineering 161; Agricultural and Resource Economics 172; Food Science and Technology 123; Applied Biological Systems Technology 182; Atmospheric Science 116; Plant Science 101; Environmental Science and Policy 167 ... 12

Minor Advisors. Bryan Jenkins (Department of Biological and Agricultural Engineering), Karen McDonald (Department of Chemical Engineering and Materials Science), Case van Dam (Department of Mechanical and Aerospace Engineering)

**Energy Policy Minor**

All courses must be taken for a letter grade. Grade of C or better required for all courses used to satisfy minor requirements with overall GPA in minor requirement courses of 2.00 or better.

Minor Requirements:

UNITS
- Energy Policy ................................. 18
  - Engineering 188 and Environmental Science and Policy 167 ........... 8
  - Select 10 units from: Civil Engineering 125; Environmental Science and Policy 171, 163, 168A, 169B; Political Science 105, 109, 122, 164 165, 162, 164, 165, 166 ............... 10

Minor Advisors. Del Nimmerman (Department of Civil and Environmental Engineering), Joan Ogden (Environmental Science and Policy)

**Energy Efficiency Minor**

All courses must be taken for a letter grade. Grade of C or better required for all courses used to satisfy minor requirements with overall GPA in minor requirement courses of 2.00 or better.

Minor Requirements:

UNITS
- Energy Efficiency ............................. 20
  - Engineering 188 and Civil Engineering 125 ......................... 8
  - Select 12 units from: Civil Engineering 126, 127, 128, 143; Environmental Science and Policy 167, Design 136A, 136B, 137A ............... 12

Minor Advisors. Frank Loge (Civil and Environmental Engineering), Dan Sperling (Institute of Transportation Studies), Mark Modera (Western Cooling Efficiency Center)

**Engineering: Biochemical**

Changes to the Biochemical Engineering Undergraduate Program

The Biochemical Engineering program is accredited by the Engineering Accreditation Commission of ABET; see http://www.abet.org.

As the biotechnology industry expands and matures, there is increasing need for engineers who can move products from the research stage to large-scale manufacture. As they fill this need, engineers must also understand the production, purification, and regulatory issues surrounding biopharmaceutical manufacturing.

Biochemical engineers—while their strong foundations in chemistry, biological sciences, and chemical process engineering—are in a unique position to tackle these problems. Biochemical engineers apply the principles of cell and molecular biology, biochemistry, and engineering to develop, design, scale up, optimize, and operate processes that use living cells, organisms, or biological molecules for the production and purification of pharmaceutical products (such as monoclonal antibodies, vaccines, therapeutic proteins, antibiotics, and industrial enzymes); for health and/or environmental monitoring (such as diagnostic kits, microarrays, biosensors); or for environmental improvement (such as bioremediation). An understanding of biological processes is also becoming increasingly important in the industries that traditionally employ chemical engineers, including the industries that process materials, chemicals, foods, energy, fuels, and semiconductors.

**Objectives.** We educate students in the fundamentals of chemical and biochemical engineering, balanced with the application of these principles to practical problems; educate students as independent, critical thinkers who can also function effectively in a team; educate students with a sense of community, ethical responsibility, and professionalism; prepare students for careers in industry, government, and academia; teach students the necessity for continuing education and self learning; and foster proficiency in written and oral communications.

Students are encouraged to adhere carefully to all prerequisite requirements. The instructor is authorized to drop students from a course for which stated prerequisites have not been completed.

**Lower Division Required Courses**

- Mathematics 21A-21B-21C-21D .................................................. 16
- Mathematics 22A-22B .................................................. 6
- Physics 9A-9B-9C .................................................. 15
- Chemistry 2A, 2B, 2C or Chemistry 2AH, 2AH, 2B, 2CH .......... 15
- Biological Sciences 2A .................................. 5
- Chemical Engineering and Materials Science 5, 6, 51, 80 ....... 12
- English 3 or University Writing Program 1, 1V or 1Y, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5 (grade of C- or better) requirement is 4

**Upper Division Required Courses**

- Biological Sciences 102 .................................. 3
- Microbiology 101 .................................. 5
- Chemistry 110A, 128A, 128B, 129A ....... 12
- Biochemical Engineering electives ................. 9
- Choose at least one course from the College of Letters & Science. Additional courses may be chosen from either list. You may receive credit for the course. If the instructor grants credit up to a maximum of two units an internship (192) or independent study (199), or Biotechnology 189L with the approval of a minor advisor. The instructor is authorized to drop students from a course for which stated prerequisites have not been completed.

**Upper Division Required Courses**

- Chemistry 110A, 110B, 128A, 128B, 129A ............ 16
- Chemical Engineering and Materials Science Electives .......................... 8
- Choose any upper division courses in the areas of Chemistry (CHE), Chemical Engineering (ECH) or Materials Science and Engineering (EMS). You may receive credit for up to a maximum of four units for any combination of engineering courses numbered 900A, 901B, 991, and 999. Courses may be selected from the following: Biological Sciences 102; Food Science and Technology 100A, 102A, 102B; Fiber and Polymer Science 150.

**Upper Division Composition Requirement**

One course from the following (grade of C- or better is required): University Writing Program 102E, 102F, 104A, 104E, 104T or passing the Upper Division Composition Exam offered by the College of Letters & Science.

**Engineering: Chemical Engineering and Materials Science**

Changes to the Chemical Engineering Undergraduate Program

Lower Division Required Courses

UNITS
- Mathematics 21A-21B-21C-21D ......... 16
- Mathematics 22A-22B ................. 6
- Physics 9A-9B-9C ......................... 15
- Chemistry 2A, 2B, 2C or Chemistry 2AH, 2AH, 2B, 2CH .......... 15
- Chemical Engineering and Materials Science 5, 6, 51, 80 ........... 12
- Engineering 45 or 45Y ...................... 4
- Biotechnology 1 or Biological Sciences 2A ......................... 4 or 5
- English 3 or University Writing Program 1, 1V or 1Y, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5 (grade of C- or better is required) .................. 4

Upper Division Required Courses

- Chemistry 110A, 110B, 128A, 128B, 129A ............ 16
- Chemical Engineering and Materials Science Electives .......................... 8
- Choose any upper division courses in the areas of Chemistry (CHE), Chemical Engineering (ECH) or Materials Science and Engineering (EMS). You may receive credit for up to a maximum of four units for any combination of engineering courses numbered 900C, 901B, 991, and 199. Courses may be selected from the following: Biological Sciences 102; Food Science and Technology 100A, 102A, 102B; Fiber and Polymer Science 150.

Upper Division Composition Requirement

One course from the following (grade of C- or better is required): University Writing Program 102E, 102F, 104A, 104E, 104T or passing the Upper Division Composition Exam offered by the College of Letters & Science.
Changes to the Materials Science and Engineering Program Details

The Department of Chemical Engineering and Materials Science offers three undergraduate programs: Chemical Engineering, Biochemical Engineering, and Materials Science and Engineering.

Mission Statement. To advance, through teaching and research programs, the frontiers of chemical engineering, biochemical engineering, and materials science and engineering, to educate students with a sense of professionalism and community, and to serve the public of California through outreach efforts.

Honors Program. An Honors Program is available to qualified students in the Chemical Engineering, Biochemical Engineering, and Materials Science and Engineering majors. It is a four-year program designed to challenge the most talented students in these areas. Students invited to participate will take a one-unit honors seminar in their freshman year and will enroll in various one-unit honors courses. In the upper division, students will complete either an honors thesis or a project that might involve local industry [Chemical engineering 194 HA, HB, HC]. Students must maintain a grade point average of 3.500 to continue in the program. Successful completion of the Honors Program will be acknowledged on the student's transcript.

Changes to the Materials Science and Engineering Undergraduate Program

Lower Division Required Courses

Mathematics 21A, 21B, 21C, 21D .................. 16
Mathematics 22A ........................................... 6
Physics 9A-9B, 9C-9D ................................. 19
Chemistry 2A, 2B, 2C, 2H, 2AH, 2AH .................. 15
Engineering 17, 45 or 45Y .......................... 8
Materials Science and Engineering 2 ............... 2
Chemical Engineering and Materials Science ......... 4

Engineering 3 or University Writing Program 1 or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5 (grade of C or better required) ........................................ 4
Communication 1 or 3 .................................... 4

Upper Division Required Courses

Engineering 190 ........................................ 3
Select one course from Engineering 180, Mathematics 135A, Statistics 120, 131A; Civil and Environmental Engineering 114; Chemical Engineering 140; or Physics 104A, ........................................... 4
A minimum of 14 units from one of the following focus areas:

Biomedical Engineering: Biology 2A, Biomedical Engineering 20, 106*, 109 Biological Systems Engineering: Biology 2A, Engineering 100, Biological Systems Engineering 75, 165
Chemical Engineering: Chemical Engineering 31, 140, 141, 142
Civil Engineering: Engineering 35, 104, 105, 114, Civil Engineering 130, 132
Select one course from:

Chemical Engineering 158A; Materials Science and Engineering 170, Engineering 106, 160, 188; Civil Engineering 123, 125, 124 .................. 34
Depending on area of focus, 6-9 units of upper division electives ........................................... 6-9

Students may receive up to a maximum of 4 units of credit for engineering 199 courses, with approval from the departmental undergraduate studies committee. To receive credit, students must submit a summary of their research to the committee. A letter of support from the faculty mentor is also required to verify that you have conducted substantial research activity.

Successful completion of the Honors Program includes a minimum of 6 units of upper division courses as part of the Group Option or Civil & Environmental Engineering elective requirement: Civil & Environmental Engineering 127, 136, 145, 148B, 150, 162, or 173

Civil & Environmental Engineering electives ........................................... 16
Civil & Environmental Engineering electives may include any upper division, letter-graded Civil & Environmental Engineering course not already used towards another degree requirement, and may include, but not exceed, a combination of six units from Civil & Environmental Engineering 198 and 199.

Upper Division Composition Requirement ........................................... 0-4

Students may receive up to a maximum of 4 units of credit for engineering 199 courses, with approval from the departmental undergraduate studies committee. To receive credit, students must submit a summary of their research to the committee. A letter of support from the faculty mentor is also required to verify that you have conducted substantial research activity.

Successful completion of the Honors Program includes a minimum of 6 units of upper division courses as part of the Group Option or Civil & Environmental Engineering elective requirement: Civil & Environmental Engineering 127, 136, 145, 148B, 150, 162, or 173

Civil & Environmental Engineering electives ........................................... 16
Civil & Environmental Engineering electives may include any upper division, letter-graded Civil & Environmental Engineering course not already used towards another degree requirement, and may include, but not exceed, a combination of six units from Civil & Environmental Engineering 198 and 199.

Upper Division Composition Requirement ........................................... 0-4

One course from the following (grade of C- or better is required): University Writing Program 102E, 102F, 104A, 104E, 104F or passing the Upper Division Composition Exam offered by the College of Letters & Science.

Engineering: Civil and Environmental

Changes to the Civil Engineering Undergraduate Program

Lower Division Required Courses

Mathematics 21A, 21B, 21C, 21D .................. 16
Mathematics 22A ........................................... 6
Physics 9A-98, 9C-9D, Chemistry 2C, Biological Science 2A or Geology 50Y .................. 19
Chemistry 2A-2B or 2A-2BH .................. 10
Civil and Environmental Engineering 3, 16, ........................................... 6
(Civil and Environmental Engineering 3 is designated for lower division students and is not open to upper-division students.

Students who do not take this course will substitute four units of additional upper division Civil and Environmental Engineering coursework.)

One course from: Civil and Environmental Engineering 19, Engineering 6, or Computer Science Engineering 30 ........................................... 4
Engineering 35, 45 or 45Y .................................. 8
English 3 or University Writing Program 1, 2, 3, or 4, or Native American Studies 5 (grade of C or better) ........................................... 4
Communication 1 or 3 .................................... 4

Civil Engineering

Upper Division Required Courses

Engineering 102, 103, 104, 104L, 105, 106 ........................................... 20
Civil and Environmental Engineering 114, 190 ........................................... 6
One course from Civil and Environmental Engineering 115, 153, Mathematics 118A, or Statistics 108, 143, 148B, 150 ........................................... 4
A minimum of four of the following group options (a minimum of two courses in each of the four areas Courses listed in more than one group may be counted) 30

Environmental: Civil and Environmental Engineering 148A or 149 and at least one course from Civil and Environmental Engineering 140, 143, 148B, 150 Geotechnical: Civil and Environmental Engineering 171 and 171 Lab and at least one course from Civil and Environmental Engineering 172, 173, 179 Structures: Civil and Environmental Engineering 130 and at least one course from Civil and Environmental Engineering 131, 132, 135, 136, 137, 138, 139

Transportation: Civil and Environmental Engineering 161, 162 or 179 and at least one course from Civil and Environmental Engineering 161, 162, 163, 165, 179 Water Resources: Civil and Environmental Engineering 141 and 141 Lab and at least one course from Civil and Environmental Engineering 142, 144, 145, 146, 155

Senior Design Requirement: You must complete at least one of the following courses as part of the Group Option or Civil & Environmental Engineering elective requirement: Civil & Environmental Engineering 127, 136, 145, 148B, 150, 162, or 173

Civil & Environmental Engineering electives ........................................... 16

Construction Engineering and Management Minor

To declare this minor program offered by the Department of Civil and Environmental Engineering, students must complete ENG 104 with a C- or better and submit a short personal statement focusing on academic and career goals, including relevant internships/experience. The online Minor Declaration form is available via the Online Advising Student Information System (OASIS) at https://students.ucdavis.edu/. Minimum overall UC GPA at time of declaration: 2.500

All prerequisites must have been taken for a letter grade; no grade lower than a C- will be accepted in any prerequisite course.

You are permitted to overlap one course between the minor and your major.

Successful completion and transcript notation of the minor requires both a minimum overall UC GPA of 2.000 and a minimum 2.000 GPA for the course work completed for the minor, with no grade lower than a C- for any course used for the minor.

Minor Requirements:

Prerequisite courses must be completed prior to enrollment in coursework taken for minor.

Construction Engineering and Management Minor

Civil and Environmental Engineering 137, 143, 153 ........................................... 12
Twelve units from:

Civil and Environmental Engineering 179, Agricultural and Resource Economics 112, 135, 157, 171A, 171B, Economics 134, 162, Environmental Science and Policy 161, may include one course from:

Pre-Fall 2011 General Education (GE): Arts and Humanities; Social Sciences; Basic Skills; Behavioral Science; Communication; Natural and Mathematical Sciences; Oral Communication; Visual Literacy; World Cultures; Writing Experience

Quarter Offered: Fall, Winter, Spring, Summer; 2015-2016 offering in parentheses

ACGH=American Cultures; DD=Domestic Diversity; DL=Cultural Skills; LS=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience
Agricultural and Resource Economics 18,
Management 11A, 11B ......................... 12
Minor advisors. J. Darby, J. T. Harvey, J. Lund

Sustainability in the Built Environment Minor
All courses must be taken for a letter grade. A grade of C- or better is required for all courses used to satisfy minor requirements with an overall GPA in minor requirement courses of 2.00 or better.

Sustainability in the Built Environment 20

*Due to variability in series course offering, consent of minor advisor is required.

Minor advisors. F. Loge, A. Kendall

Upper Division Required Courses
Engineering: Electrical and Computer Engineering

Changes to Electrical Engineering Undergraduate Program

Lower Division Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 21A-21B-21C-21D .................. 16</td>
<td></td>
</tr>
<tr>
<td>Mathematics 22A-22B ......................... 6</td>
<td></td>
</tr>
<tr>
<td>Physics 9A-9B-9C-9D .......................... 19</td>
<td></td>
</tr>
<tr>
<td>Chemistry 2A .................................. 5</td>
<td></td>
</tr>
<tr>
<td>Computer Science Engineering 30 ............. 4</td>
<td></td>
</tr>
<tr>
<td>Engineering 6, 17 ................................ 8</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 1, 10 ... 4</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 10: 3 1</td>
<td></td>
</tr>
<tr>
<td>Computer Science Engineering 10: 3 (Computer Science and Engineering 10 is designed for sophomore students and is not recommended for upper-division students. Transfer and change of major students who do not take Electrical and Computer Engineering 10 will substitute three additional units of upper-division electives.) Engineering 17......................... 4</td>
<td></td>
</tr>
<tr>
<td>English 3 or University Writing Program 1, 1Y or 1Y or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5 (grade of C- or better required) .................. 4</td>
<td></td>
</tr>
<tr>
<td>Communication 1 or 3 ......................... 4</td>
<td></td>
</tr>
</tbody>
</table>

Upper Division Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical and Computer Engineering 100, 110A, 130A, 140A, 150A, 161, 180A, 196 ...................... 31</td>
<td></td>
</tr>
<tr>
<td>Engineering 160, 190 or Computer Science Engineering 188 .................. 3-4</td>
<td></td>
</tr>
<tr>
<td>Upper-division electives** .................. 32</td>
<td></td>
</tr>
<tr>
<td>At least one design project course**: Electrical and Computer Engineering 119AB, 134AB, 163AB, 181AB, 193AB, 195AB, The remaining electives may be any letter-graded upper division Electrical and Computer Engineering course not used to satisfy another major requirement; Computer Science and Engineering 40, 150, 152B, 163, 175, 177, or 178 Technical electives*** .................. 9</td>
<td></td>
</tr>
<tr>
<td>A maximum of 6 units for any combination of engineering or Computer Science electives such as 190C, 192, 198, and 199 may be used. Chemistry 28, 2C and any upper-division course except Chemistry 195 &amp; 197 Engineering 35, 45, 49 Any upper-division engineering course except Engineering 100, 190, 199 restricted to one unit of technical elective Computer Science Engineering 132, 155, 157, 188, 154A, &amp; 154B (ECS 154AB courses may be used by EEEL majors who did not take EEC 170): Any upper-division Mathematics course except Mathematics 135A &amp; 197TC Any upper-division Physics course except Statistics 116, 137, 160 (restricted to one unit of technical elective), 195, 197T Any upper-division Statistics course except Statistics 100, 102, 103, 104, 120, 120P, 122, 122P, 132 Economics 101, 102, 122, 124, 140 Management 11A, 11B, 100, 120, 140, 150, 160, 170, 180 Upper Division Composition Requirement: One course from the following (a grade of C- or better is required): University Writing Program 101, 102A, 104A or passing the Upper Division Composition Exam offered by the College of Letters and Science.....0 or 4</td>
<td></td>
</tr>
<tr>
<td>*Maximum of one course appearing on both the core elective list and the design elective list may be counted in both categories.</td>
<td></td>
</tr>
<tr>
<td>**All design project courses are also considered design lab courses and may be counted in both categories simultaneously.</td>
<td></td>
</tr>
<tr>
<td>***After completion of the upper division elective requirement (at least 8 courses), 2 core, 2 labs, 1 project) any units in excess of 32 will count toward the technical elective requirement.</td>
<td></td>
</tr>
</tbody>
</table>

Changes to Computer Engineering Undergraduate Program

Lower Division Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 21A-21B-21C-21D .................. 16</td>
<td></td>
</tr>
<tr>
<td>Mathematics 22A-22A-22D-22E .................. 16</td>
<td></td>
</tr>
<tr>
<td>Physics 9A-9B-9C-9D .......................... 19</td>
<td></td>
</tr>
<tr>
<td>Chemistry 2A .................................. 5</td>
<td></td>
</tr>
<tr>
<td>Computer Science Engineering 20, 30, 40, 40 ........ 9</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 1, 10 ... 4</td>
<td></td>
</tr>
<tr>
<td>Electrical and Computer Engineering 10: 3 1</td>
<td></td>
</tr>
<tr>
<td>Computer Science Engineering 10: 3 (Computer Science and Engineering 10 is designed for sophomore students and is not recommended for upper-division students. Transfer and change of major students who do not take Electrical and Computer Engineering 10 will substitute three additional units of upper-division electives.) Engineering 17......................... 4</td>
<td></td>
</tr>
<tr>
<td>English 3 or University Writing Program 1, 1Y or 1Y or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5 (grade of C- or better required) .................. 4</td>
<td></td>
</tr>
<tr>
<td>Communication 1 or 3 ......................... 4</td>
<td></td>
</tr>
</tbody>
</table>

Upper Division Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering 160, 190 or Computer Science Engineering 188 .................. 3-4</td>
<td></td>
</tr>
<tr>
<td>Upper-division electives** .................. 32</td>
<td></td>
</tr>
<tr>
<td>At least one design project course**: Electrical and Computer Engineering 119AB, 134AB, 163AB, 181AB, 193AB, 195AB, The remaining electives may be any letter-graded upper division Electrical and Computer Engineering course not used to satisfy another major requirement; Computer Science and Engineering 40, 150, 152B, 163, 175, 177, or 178 Technical electives*** .................. 9</td>
<td></td>
</tr>
<tr>
<td>A maximum of 6 units for any combination of engineering or Computer Science electives such as 190C, 192, 198, and 199 may be used. Chemistry 28, 2C and any upper-division course except Chemistry 195 &amp; 197 Engineering 35, 45, 49 Any upper-division engineering course except Engineering 100, 190, 199 restricted to one unit of technical elective Computer Science Engineering 132, 155, 157, 188, 154A, &amp; 154B (ECS 154AB courses may be used by EEEL majors who did not take EEC 170): Any upper-division Mathematics course except Mathematics 135A &amp; 197TC Any upper-division Physics course except Statistics 116, 137, 160 (restricted to one unit of technical elective), 195, 197T Any upper-division Statistics course except Statistics 100, 102, 103, 104, 120, 120P, 122, 122P, 132 Economics 101, 102, 122, 124, 140 Management 11A, 11B, 100, 120, 140, 150, 160, 170, 180 Upper Division Composition Requirement: One course from the following (a grade of C- or better is required): University Writing Program 101, 102A, 104A or passing the Upper Division Composition Exam offered by the College of Letters and Science.....0 or 4</td>
<td></td>
</tr>
<tr>
<td>*Maximum of one course appearing on both the core elective list and the design elective list may be counted in both categories.</td>
<td></td>
</tr>
<tr>
<td>**All design project courses are also considered design lab courses and may be counted in both categories simultaneously.</td>
<td></td>
</tr>
<tr>
<td>***After completion of the upper division elective requirement (at least 8 courses), 2 core, 2 labs, 1 project) any units in excess of 32 will count toward the technical elective requirement.</td>
<td></td>
</tr>
</tbody>
</table>

Pre-Fall 2011 General Education (GE) Requirements

- ACH: American Cultures
- DD: Domestic Diversity
- VL: Visual
- WC: World Cultures
- AH: Arts and Humanities
- SC: Science and Engineering
- SS: Social Sciences
- SE: Social and Economic Issues
- SL: Quantitative
- VL: Visual
- WC: World Cultures
- Writing Experience

Quarter Offered: Fall, Winter, Spring, Summer 2011-2018 offering in parentheses
### Changes to the Mechanical and Aerospace Engineering Undergraduate Programs

The Department of Mechanical and Aerospace Engineering administers two undergraduate programs in the College of Engineering: (1) Mechanical Engineering, (2) Aerospace Science and Engineering. For more information about our programs, please see [http://mae.ucdavis.edu/ug.php](http://mae.ucdavis.edu/ug.php).

Mission. The Department of Mechanical and Aerospace Engineering is committed to educating future engineers so that they may contribute to the economic growth and well-being of the state, the nation, and the world, and to the advancement of knowledge in the mechanical and aerospace sciences.

### Changes to Mechanical Engineering Program Requirements

#### Lower Division Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 21A-21B-21C-21D</td>
<td>16</td>
</tr>
<tr>
<td>Mathematics 22A-22B</td>
<td>6</td>
</tr>
<tr>
<td>Physics 9A-9B-9C-9D</td>
<td>19</td>
</tr>
<tr>
<td>Chemistry 2A-2B or 2AH-2BH</td>
<td>10</td>
</tr>
<tr>
<td>Engineering 4</td>
<td>3</td>
</tr>
<tr>
<td>Engineering 6 or Mechanical Engineering 7</td>
<td>4</td>
</tr>
<tr>
<td>Engineering 17, 35, 45 (or 45Y)</td>
<td>12</td>
</tr>
<tr>
<td>Engineering 60 or Mechanical Engineering 6</td>
<td>4</td>
</tr>
<tr>
<td>Engineering 106, 107A &amp; B</td>
<td>3</td>
</tr>
<tr>
<td>Geology 17, 32, 35, 50, 50L, 60, 100, 101B, 101L, 103, 131, 160, 162, 163</td>
<td>6</td>
</tr>
<tr>
<td>Hydrologic Science 110, 124, 134, 141, 142, 143, 144, 146, 151, 182</td>
<td>10</td>
</tr>
<tr>
<td>Management 11A, 11B, 100, 120, 140, 150, 160, 170, 180</td>
<td>10</td>
</tr>
<tr>
<td>Mathematics any upper division course except Mathematics 197TC</td>
<td>4</td>
</tr>
<tr>
<td>Physics 9HE and any upper division course except Physics 160 (restricted to one unit of technical elective)</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 130A, 131A</td>
<td>4</td>
</tr>
<tr>
<td>Select one course from the following Dynamic/Mechanical Design Electives: Engineering 122, Mechanical Engineering 121, 139, 150B, 151, 154, 171</td>
<td>4</td>
</tr>
<tr>
<td>Select two courses from the following Restricted Electives: Aerospace Science and Engineering 129, 138, 140, 141, 142, Engineering 122, 188, Materials Science and Engineering 180, 182, Mechanical Engineering 134, 152, 161, 163, 164</td>
<td>8</td>
</tr>
<tr>
<td>Students may also choose from Aerospace Science and Engineering 130A, 130B, Mechanical Engineering 121, 139, 150B, 151, 154, 171 if these courses are not used in satisfaction of other degree requirements</td>
<td>8</td>
</tr>
<tr>
<td>Technical Elective Requirement</td>
<td>4</td>
</tr>
<tr>
<td>At least four units must be taken from any Upper Division Engineering course, which may include courses from the above System Dynamics/Mechanical Design or Restricted Elective lists if these courses are not used in satisfaction of other degree requirements. Up to 4 units may be selected from Mechanical Engineering 185A/B or any engineering 199 not used in satisfaction of other degree requirements. Courses that cannot be used are Biomedical Engineering 110L, Engineering 160, 191, 198 (Gearing up for Graduate School/undergraduate research), Computer Science Engineering 188 or any 1977 course. Up to three units may be used from the following technical electives list: Agricultural and Resource Economics 100A, 100B, 112</td>
<td>8</td>
</tr>
<tr>
<td>Applied Biological Systems Technology 101, 142, 165</td>
<td>4</td>
</tr>
<tr>
<td>Atmospheric Science 149, 160</td>
<td>4</td>
</tr>
<tr>
<td>Biological Sciences 2A, 2B, 2C</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 2C, 2CH, 8A, 88 and any upper division course except Chemistry 195 and 197</td>
<td>4</td>
</tr>
<tr>
<td>Economics 100, 101, 102, 123, 122</td>
<td>6</td>
</tr>
<tr>
<td>Engineering: Any upper division course offered in the college of engineering except Biomedical Engineering 110L, Engineering 160, 191, 198 (Gearing up for Grad School/Undergraduate Research), Computer Science Engineering 188 or any 1977 course</td>
<td>6</td>
</tr>
<tr>
<td>Environmental and Resource Sciences 100, 100L, 121, 131, 136, 185, 186L</td>
<td>6</td>
</tr>
<tr>
<td>Environmental Science 100, 121, 131, 136, 185, 186L</td>
<td>6</td>
</tr>
<tr>
<td>Exercise Biology 102</td>
<td>4</td>
</tr>
<tr>
<td>Fiber and Polymer Science 100 (same as Materials Science Engineering 147)</td>
<td>4</td>
</tr>
<tr>
<td>Food Science and Technology 159, 160</td>
<td>4</td>
</tr>
<tr>
<td>Geology 17, 32, 35, 50, 50L, 60, 100, 100L, 101, 101L, 130, 131, 160, 162, 163</td>
<td>4</td>
</tr>
<tr>
<td>Geology 110, 124, 134, 141, 142, 143, 144, 146, 151, 182</td>
<td>4</td>
</tr>
<tr>
<td>Management 11A, 11B, 100, 120, 140, 150, 160, 170, 180</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics any upper division course except Mathematics 197TC</td>
<td>4</td>
</tr>
<tr>
<td>Physics 9HE and any upper division course except Physics 160 (restricted to one unit of technical elective)</td>
<td>4</td>
</tr>
<tr>
<td>Statistics any upper division course except Statistics 100, 102, 103, 104, 106, 108</td>
<td>4</td>
</tr>
<tr>
<td>Upper Division Composition Requirement</td>
<td>0 or 4</td>
</tr>
<tr>
<td>One course from the following [a grade of C- or better is required] Engineering Writing Program 101, 102E, 104A, 104E, 104T or passing the Upper-Division Composition Exam.</td>
<td>4</td>
</tr>
</tbody>
</table>

### English

#### Changes to the English Major

**A.B. Major Requirements:**

<table>
<thead>
<tr>
<th>Preparatory Subject Matter</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 3 or University Writing Program 1</td>
<td>4</td>
</tr>
<tr>
<td>One course from: English 40, 43, 44, 45</td>
<td>4</td>
</tr>
<tr>
<td>English 10A, 10B, 10C</td>
<td>12</td>
</tr>
</tbody>
</table>

**Depth Subject Matter**

<table>
<thead>
<tr>
<th>English 110A or 110B</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historical Distribution Requirements</td>
<td>20</td>
</tr>
<tr>
<td>Three courses focusing on literature written in English before 1800, at least one of which must be on an author or literary tradition primarily before 1500:</td>
<td></td>
</tr>
<tr>
<td>Before 1500</td>
<td></td>
</tr>
<tr>
<td>English 111, 113A, 113B</td>
<td></td>
</tr>
<tr>
<td>1500-1800</td>
<td></td>
</tr>
<tr>
<td>English 115, 117, 122, 123, 142, 150A, 155A, 185A</td>
<td></td>
</tr>
<tr>
<td>One course focusing on literature written in English between 1800 and 1900:</td>
<td></td>
</tr>
<tr>
<td>English 130, 133, 143, 144, 145, 155B, 158A, 181A, 185B</td>
<td></td>
</tr>
</tbody>
</table>
Environmental Policy Analysis and Planning

Changes to the Environmental Policy Analysis and Planning Major

B.S. Major Requirements:

- **UNITS**

  - English Composition and Public Speaking Requirement: 3-8
  - University Writing Program 101, 102A-G, 104A-E, or passing the Upper Division English Composition exam. 0.4
  - Communication 1 or 3 or Dramatic Art 10. 3-4
  - Preparatory Subject Matter: 46-52
  - Bioloical Sciences 2A, 10, or 10V. 4-5
  - Chemistry 2A. 3-4
  - Plant Sciences 21, or Science & Society 18. 3-8
  - Economics 1A, 1B. 8
  - Animal Science 1, Atmospheric Science 60, Biological Sciences 2B, Environmental Science & Management 100, Geology 1 or 134, Plant Sciences 12, Wildlife, Fish, & Conservation Biology 11. 3-5
  - Environmental Science & Policy 1. 4
  - Mathematics 16A-16B, 17A-17B, or 21A. 6-8
  - Physics 1A, 1B. 6
  - Political Science 1. 4
  - Statistics 13 or 32. 3-4
  - Satisfaction of General Education requirement.

Depth Subject Matter: 49-51

(Students must take these units on a letter grade basis, and must attain an overall grade equal to or higher than a 2.0.)

<table>
<thead>
<tr>
<th>Course</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science &amp; Policy 110, 160, 168A, 168B</td>
<td>17</td>
</tr>
<tr>
<td>Environmental Science &amp; Policy 161</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Science &amp; Policy 178</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Science &amp; Policy 179</td>
<td>4</td>
</tr>
<tr>
<td>Select one course from: Agricultural &amp; Resource Economics 106, Sociology 106</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 100, 103, or 109</td>
<td>4-5</td>
</tr>
<tr>
<td>Agricultural &amp; Resource Economics 100, or Economics 100</td>
<td>4</td>
</tr>
<tr>
<td>Agricultural &amp; Resource Economics 176, Economics 125, or Environmental Science &amp; Policy 175</td>
<td>4</td>
</tr>
<tr>
<td>Applied Biological Systems Technology 150</td>
<td>4</td>
</tr>
<tr>
<td>Select one course from: Applied Biological Systems Technology 181N, 182, or Environmental Science &amp; Management 185 or 186</td>
<td>4-5</td>
</tr>
<tr>
<td>Areas of Specialization (choose one) 12-17</td>
<td></td>
</tr>
<tr>
<td>Literature, Criticism, and Theory One upper division English elective. Two advanced courses, one of which can be a seminar. Please note that English 110A or 110B is a prerequisite for advanced study in the major.</td>
<td>4</td>
</tr>
<tr>
<td>English 149, 153, 159, 163, 165, 177, 187A, 188A, 189, 194H, 195H</td>
<td>3-4</td>
</tr>
<tr>
<td>Creative Writing Three sections of English 100F, 100P, 100NF, 100FA, 100PA</td>
<td>3-4</td>
</tr>
</tbody>
</table>

Total Units for the Major: 64

Environmental Science and Management

Changes to the Environmental Science and Management Major

B.S. Major Requirements:

- **UNITS**

  - English Composition and Public Speaking requirement: 3-8
  - University Writing Program 101, 102A-G, 104A-E, or passing the Upper Division English Composition exam. 0.4
  - Communication 1, 3, or Dramatic Art 10. 3-4
  - Preparatory Subject Matter: 48-57
  - Biological Sciences 2A, 2B, 2C. 15
  - Geology 1 or 50. 4 |
  - Chemistry 2A, 2B, 2AH, 2BH. 5 |
  - Mathematics 16A-16B, 17A-17B, or 21A. 6-8
  - Physics 1A, 1B. 6 |
  - Political Science 1. 4 |
  - Statistics 13 or 32. 3-4 |
  - Satisfaction of General Education requirement.

Depth Subject Matter: 28-32

- **Environmental Science and Environment**
  - Environmental Science and Management 120. 4
  - Environmental Science and Policy 100 or Evolution and Ecology 100. 4
  - Environmental Science and Policy 162. 4
  - Environmental Science and Policy 165N, 165N, 167, 169, 170, 171, 172. 4
  - Environmental Science and Policy 166N, 167, 170, 171, 172. 4

**Integrative Policy**

Students choosing this individualized track must consult with a faculty adviser to identify an area of emphasis within this track and to select four upper division courses with a common theme. Possible areas of emphasis are marine policy, pollutants in the environment, planning in the presence of environmental hazards, sustainable development, or environmental and natural resource economics. If you are considering this track, please contact the major adviser as soon as possible.

**Water Management**

Select two courses from: Environmental Science & Policy 166N, 169, or Hydrologic Science 150. 6

Select two courses from: Environmental Science & Management 100, 121, Environmental Science & Policy 151, 155, Geology 134, Hydrologic Science 141, 143, Soil Science 118, Wildlife, Fish, & Conservation Biology 120, Biological Science 124, Environmental Science & Policy 116N, 124, 150C, or 152. 6-8

**Total Units for the Degree** 110-128

Major Adviser: J. Sanchirico (Environmental Science & Policy)
Select three courses from: Atmospheric Science 60, 116, 133, Environmental Science and Policy 121, 131, or Soil Science 100 .............................................. 3.5
Select one course from: Environmental Science and Policy 170, 171, 172 or 179 .............................................. 4
Evolution and Ecology 100 .............................................. 4
Select one course from: Environmental Science and Policy 127 or Wildlife, Fish, and Conservation Biology 116, 124, or Plant Sciences 147 and 147L, or Wildlife, Fish, and Conservation Biology 114 .............................................. 3.4
Select one course from: Environmental Science and Policy 121 or Wildlife, Fish, and Conservation Biology 122 .............................................. 4
Evolution and Ecology 147 or Plant Sciences 162 or Environmental Horticulture 160 .............................................. 3.4
Select one biome level course on wetlands, forests, or water [See adviser for list] .............................................. 3.5
Select one organismal biology course on birds, mammals, or plants [See adviser for list] .............................................. 3.5
Complete one lab associated with either the biome level or organismal biology course .............................................. 2.3

Natural Resource Management Track ................................. 32-41
Select one course from: Environmental Science and Policy 161 or Hydrologic Science 150 .............................................. 3.4
Statistics 103 or [equivalent upper-division statistics] .............................................. 4
Select two courses from: Environmental Science and Management 104, Environmental Science and Management 141, 144, Environmental Science and Policy 151, 155, Evolution and Ecology 115, Plant Biology 117, Plant Sciences 130 or Wildlife, Fish, and Conservation Biology 110, 111, 120, or 134 .............................................. 6.8
Select two courses from: Atmospheric Science 116, Environmental Science and Policy 121, 131 or Soil Science 100 .............................................. 6.9
Environmental Science and Management 185 or 186 .............................................. 4
Climate Change and Air Quality Track ..................................... 32-41
Atmospheric Science 60 .............................................. 4
Select three courses from: Atmospheric Science 115, 116, 130, Environmental Science and Management 131 or Geology 108 .............................................. 9.12
Select two courses from: Environmental Science and Management 100, 121, Environmental Science and Policy 116N, Hydrologic Science 143 or Soil Science 100 .............................................. 6.9
Select one course from: Environmental Science and Management 144, Environmental Science and Policy 124, 150C, 151S, Evolution and Ecology 115 or Plant Sciences 130 .............................................. 3.4
Select one course from: Evolution and Ecology 147 or 149 .............................................. 4
Select two courses from: Environmental Science and Policy 163, 165N, 166N, 167, 171, 172 or 179 .............................................. 6.8
Geospatial Information Science Track .............................................. 33-42
Select two courses from: Applied Biological Systems Technology 181N, 182, Environmental Science and Management 185, or 186 .............................................. 8.9
Select two courses from: Environmental Science and Policy 121, Statistics 104, 106, 108, 120A, 120B at 127 or 137 .............................................. 8
Other applicable information technology courses from the Engineering department including database management, digital library systems, and network and web technologies may be substituted for spatial information with approval
Select three courses from the following options: Must cover both physical and biological courses from Atmospheric Science 110, 116, 113, Soil Science 100, Environmental Science and Policy 124, 150C, 151, 155, 165N, 166N, 171, 172 or 179 .............................................. 6.8
Select two courses from: Environmental Science and Policy 121, Statistics 104, 106, 108, 120A, 120B at 127 or 137 .............................................. 8
Other applicable information technology courses from the Engineering department including database management, digital library systems, and network and web technologies may be substituted for spatial information with approval
Select three courses from the following options: Must cover both physical and biological courses from Atmospheric Science 110, 116, 113, Soil Science 100, Environmental Science and Policy 124, 150C, 151, 155, 165N, 166N, 171, 172 or 179 .............................................. 6.8
Select one course from: Environmental Science and Policy 185, Geology 134, Hydrologic Science 147, or Soil Science 118 .............................................. 3.4
Select two courses from: Atmospheric Science 160, Environmental Science and Management 144, Environmental Science and Policy 116N, 150A, 150C, 151, 155, Geology 132, Plant Biology 117 or Plant Sciences 130 .............................................. 6.8
Watershed Science Track .................................................. 38-47
Environmental Science and Management 121 or Hydrologic Science 10 .............................................. 3
Soil Science 100 .............................................. 3
Select two courses from: Hydrologic Science 141 (but not both), Hydrologic Science 142, 143, Environmental Science and Management 108 or Hydrologic Science 151 (but not both) .............................................. 6.8
Select one course from: Geology 35, 136, 139, or 140 .............................................. 3.5
Select one course from: Applied Biological Systems Technology 181N or 182 .............................................. 4
Select one course from: Soil Science 105, 118, or 120 .............................................. 4.5
Select two courses from: Environmental Science and Policy 166N, 168A, 169, 172, 179, Hydrologic Science 150, or Landscape Architecture 60 .............................................. 6.9
Atmospheric Science 133 .............................................. 3.4
Select one course from: Entomology 116, Evolution and Ecology 115, or Wildlife, Fish, and Conservation Biology 120 or 134 .............................................. 3.4

Total Units for the Major .............................................. 111-114
Major Advisers, Marcel Holyoak (Environmental Science and Policy) and Terrance Nathan (Land, Air and Water Resources)
Advising centers for the major, including peer advising, are located in both the Environmental Science and Policy and Land, Air and Water Resources departments.
Students whose last names begin with the letters A-L, please see Melissa Whaley in 2134 Wickson Hall.
Students whose last names begin with the letters M-Z, please see the advisor in 1150 Plant and Environmental Sciences.

Food Science

Changes to the Food Science Major

B.S. Major Requirements:

**UNITS**

Preparatory Subject Matter .............................................. 61
University Writing Program 102F, 104A, or 104E .............................................. 4
Communication 1 .............................................. 4
Mathematics 16A-16B-16C .............................................. 9
Biological Sciences 2A .............................................. 5
Chemistry 2A-2B-2C, 8A, 8B (or more advanced series) .............................................. 21
Physics 7A-7B-7C .............................................. 12
Food Science and Technology 50 .............................................. 3
Nutrition 104 (or substitute) .............................................. 4

Depth Subject Matter .............................................. 49
Biological Sciences 102, 103 .............................................. 6
Statistics 100 .............................................. 4
Microbiology 101 .............................................. 5
Food Science and Technology 100A, 100B, 101A, 101B, 103, 104, 104L, 110, 110L, 190 .............................................. 30
Food Science and Technology 117 or Statistics 106 .............................................. 4
Food Science and Technology 127 or 107 .............................................. 4

Select one of the following two options:

Food Science Option

The Food Science option provides a broad exposure to food chemistry, food microbiology and food processing. Students find positions in quality assurance, product development, and food processing in the food industry.

Restricted Electives for the Food Science option .............................................. 18

The restricted electives can:

1. Provide a broad exposure to students who would seek positions in quality assurance, product development, and processing in the food industry.
2. Prepare students for graduate study in food science or related programs.
3. Prepare students for professional school in the health sciences. Select courses from a master list, which is available from the advising center for the major.

Brewing Science Option

The Brewing Science option prepares students for careers in production or quality assurance within the brewing industry or other food fermentation industries [e.g., other alcoholic beverages, vinegar and cheese]. The option also prepares students for graduate study in food science or related programs, and exposes the students to diverse topics, including chemistry, biochemistry, microbiology and processing.

Specific course requirements .............................................. 18
Food Science and Technology 102A, 102B, 109, 123 .............................................. 18

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; Div=Domestic Diversity; Writ=Writing Experience
Fall 2011 and Fall 2012 General Education (GE): AH=Arts and Humanities; SS—Social Sciences

ACGH=American Cultures; DD=Domestic Diversity; OL=Oral Skills;QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience
Quarter Offered: F=Fall, W=Winter, S=Spring, Su=Summer; 2015-2016 offering in parentheses
Gender, Sexuality and Women's Studies

Effective Fall 2015, the Women and Gender Studies Program has been renamed Gender, Sexuality and Women's Studies.

(College of Letters & Science)

The Major Program

Gender, Sexuality and Women's Studies is an interdisciplinary major founded on the understanding that the social production of gender is inseparable from race, class, nationality, ability and other categories of difference. Our curriculum places feminist concerns within a transnational context, while respecting the need for geographic and historical specificity. Our frameworks inform our teaching, our research, our institutional and community practices, and the principles we bring to our classrooms. Gender, Sexuality and Women's Studies offers a wide range of classes that use the lens of gender to examine colonialism and post-colonialism, globalization, history, sexuality, queer theory, literature, popular culture, feminist video production, area studies, film, fashion and food. The Program offers both an undergraduate major and minor. We also work collaboratively with other units on campus to sponsor two undergraduate minors, Sexuality Studies and Social and Ethnic Relations, and an under-graduate concentration in transnational production and consumption.

The Program

One of the most exciting and challenging aspects of the Gender, Sexuality and Women's Studies Program is that students, in consultation with the peer and faculty advisors, can pursue their particular academic interests and design their course of study accordingly. In devising their major plan, students will draw on courses offered in African American and African Studies, American Studies, Anthropology, Asian American Studies, Chicana/o Studies, Comparative Literature, English, French, German and Italian Studies, History, Linguistics, Native American Studies, Political Science, Psychology, Sociology, Spanish, Textiles and Clothing, and other related disciplines.

In addition to offering a broad array of courses that deal with gender, class, race, ethnicity, and sexual identity, the Gender, Sexuality and Women's Studies Program affords interested students the opportunity to earn internship credit and conduct independent research. Career counseling as well as take advantage of the Honors Thesis option. Students design a program of study in consultation with an advisor that is in accordance with their individual career goals. Many Gender, Sexuality and Women's Studies majors find it advantageous to pursue a double major, or to minor in another field of study. Upon successful completion of the degree requirements, students majoring in the program will graduate with a Bachelor of Arts in Gender, Sexuality and Women's Studies.

Career Alternatives

A degree in Gender, Sexuality and Women's Studies opens many possibilities for future employment. The major introduces students to relevant social issues, fosters critical thinking, develops strong verbal, writing and research skills and encourages social advocacy.

Pre-professional students choose to discover that a major in Gender, Sexuality and Women's Studies offers useful preparatory training for medical or law school. It is particularly suitable for those interested in specializing in social policy, international development, social justice or gender-related work in a wide range of institutions and contexts. Students who plan to do practical work in counseling, clinical psychology, social services, educational or political work will also find a major in Gender, Sexuality and Women's Studies provides a strong foundation. Those who wish to pursue graduate level research in such fields as anthropology, comparative literature, cultural studies, economics, education, ethnic studies, English, film studies, history, languages and literatures, performance studies, philosophy, political science, and sociology will also benefit from a strong Gender, Sexuality and Women's Studies undergraduate background in critical theory, social analysis, history and a sound understanding of cultural representation and diversity.

Increasingly, media and cultural institutions, corporations, and personnel firms are hiring specialists in women and gender studies trained in understanding the complex cultural challenges and demands arising from diversity among State and federal agencies need people who have special understanding of the problems that diverse groups of women face in society, industry, and the professions. Educational institutions across the spectrum need specialists to develop and administer women and gender studies programs, multi-cultural community centers, LGBTQ organizations and other organizations designed specifically to deal with gender, social diversity and inequality, and a growing range of old and new social challenges arising in the context of globalization.

Some of our alumni have developed careers other than those described above. Gender, Sexuality and Women's Studies faculty and peer advisors can provide even more ideas about possible future careers. Doing internships related to coursework enables students to integrate theory with hands-on practice and service in the community.

Gender, Sexuality and Women's Studies

A.B. Major Requirements

Preparatory Subject Matter

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three courses from: Women's Studies, 50, 60, 70</td>
<td>20</td>
</tr>
<tr>
<td>Two courses selected from: African American and African Studies 10, 17, American Studies 21, 22, 20, 30, Asian American Studies 1, 2, Chicana/o Studies 10, 21, 25, 50, Comparative Literature 12, Dramatic Art 1, English 3, History 72A, 72B, 72F, Native American Studies 10, 32, Political Science 7, Psychology 1, Science and Technology 1, 20, 32, Sociology 2, 3, 11, 30A, 30B, Textiles and Clothing 7, Undergraduate Writing Program 11, Women's Studies 20</td>
<td>8</td>
</tr>
</tbody>
</table>

Depth Subject Matter

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women's Studies 103, 104, 137, 190</td>
<td>16</td>
</tr>
<tr>
<td>Histories and Cultures 12</td>
<td>12</td>
</tr>
<tr>
<td>Choose three courses to meet this requirement. May not duplicate those used to meet other Gender, Sexuality and Women's Studies major requirements. The list that follows represents a partial list of options; other courses may be included with the consent of the Gender, Sexuality and Women's Studies Adviser.</td>
<td></td>
</tr>
</tbody>
</table>

Pre-Fall 2011 General Education (GE): ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Diverse Domesticity; Writ=Writing Experience

AGCH=American Cultures; DD=Diverse Domesticity; OL=Oral Skills; QL=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience

Quarter Offered: F=Fall; W=Winter; S=Spring; J=Summer; 2015-2016 offering in parentheses

Total units for the major Additional

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Adviser. All Gender, Sexuality and Women's Studies majors and minors must consult with a faculty adviser, individually, at least once each academic year.</td>
<td></td>
</tr>
</tbody>
</table>

Minor Program Requirements

<table>
<thead>
<tr>
<th>REQUIREMENTS</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, Sexuality and Women's Studies</td>
<td>24</td>
</tr>
</tbody>
</table>

Women's Studies 20, 50, 60, 70 or 80 .. 4
Global Disease Biology

New Major & Minor in Global Disease Biology

(Conference of Agricultural and Environmental Sciences)
Department of Plant Pathology.

Program Office, 152 Hutchison Hall
530-752-7727

Master Advisor, TBA

Committee in Charge
Patricia A. Conrad, D.V.M., Ph.D., Professor (Pathology, Microbiology and Immunology)
Sandra Dandekar, Ph.D., Professor (Medical Microbiology and Immunology)
Thomas Gordon, Ph.D., Professor (Plant Pathology)
Dori Borjesson, D.V.M, Ph.D., Professor (Pathology, Microbiology and Immunology)
Joie Watson, D.V.M., Ph.D., Professor (Medical Microbiology and Immunology)
Michael S. Wilkes, M.D., M.P.H., Ph.D., Professor (Internal Medicine)

Faculty
Faculty includes members of the Departments of Plant Pathology, on page 479; Veterinary Medicine, School of, on page 545; Medicine, School of, on page 180; Sociology 131, 132, 134, 145B, 158, 172, Women’s Studies 106, 180………………… 4


Additional Electives from approved list of upper division cross-listed and Women’s Studies courses…………………………………12

Note: With prior consultation with an adviser, other upper division courses may be accepted toward the minor program. Under no circumstances may more than one lower division course be offered in satisfaction of requirements for the minor.

Minor Adviser. All Gender, Sexuality and Women’s Studies majors and minors must consult with a faculty adviser, individually, at least once each academic year.

Graduate Study. The Gender, Sexuality and Women’s Studies Program offers a designated emphasis in Feminist Theory and Research for students enrolled in the Ph.D. programs of fifteen other affiliated departments.

Global Disease Biology

The Major Program

The Global Disease Biology major offers students the opportunity to study disease and its relationship to the health of people, animals, and plants, and the environment. The program uses an integrated approach to advance student understanding of the concept(s) of disease, the societal and personal impacts of past, present and future diseases, and the science behind disease discoveries, causes, evolution, diagnosis, treatment, and prevention. The program recognizes the interconnectedness of people, animals, plants, and the environment and aims to identify and address the fundamental causes of poor health around the world. Managing global disease problems requires a multidisciplinary, holistic approach to address the full spectrum of human, animal, plant, and environmental health risks (also known as a One Health approach). Throughout a series of core courses, human, animal, and plant health issues, along with tools available to solve these problems, will be introduced to provide students with real-world scenarios in which to apply and advance their creative and critical thinking skills. The major prepares graduates with the knowledge, leadership skills and expertise required to exceed in professions associated with global health, the environment, food security and safety, and the science behind disease, and health policy.

The Program. The Global Disease Biology major will provide students with broad preparatory scientific course work, upper division biology core classes, flexibility in upper division electives, and a strong research experience. Global Disease Biology core classes are intended to be interdisciplinary and focus on concepts that cut across human, animal, and plant diseases offering a unifying ecological and quantitative perspective on disease.

Students plan their chosen emphasis of study as part of a required discussion course and in consultation with their advisers. Students will draw from many undergraduate courses currently offered on disease and health in a way that complements the core courses required for the Global Disease Biology major. The major includes a senior research project, which each student designs to bridge the disciplines of the major.

Internships and Career Alternatives. The program and interests of each student in solving societal problems guides students to a range of internship and career choices. On and off-campus internship opportunities are available in research laboratories, in field situations, with governmental agencies, with private industry, and in international programs. A degree in Global Disease Biology prepares students for careers in research, teaching, governmental regulation, health care industry, or agriculture (food safety/food security) as each relates to disease and health of people, animals, and plants. Students in the major gain research experience and may choose to continue their training at the graduate or professional level in a variety of biological disciplines. Careers in medicine, veterinary medicine, and plant pathology are open to Global Disease Biology majors.

B.S. Major Requirements:

UNITS

Preparatory Subject Matter …………………………… 60-62
Global Disease Biology 90………………… 1
Science and Society 13………………… 3
Biological Sciences 2A-2B-2C………………… 15
Chemistry 2A-2B-2C, and 8A-8B or 118A-118B………………… 21-23
General Physics 7A-7B………………… 3
Mathematics 17A-17B-17C………………… 12

Depth Subject Matter …………………………… 46-51
Biological Sciences 101, 103………………… 4
Evolution and Ecology 100………………… 4
Microbiology 101………………… 5
One course from Statistics 13, 100, Plant Sciences 120………………… 4
Pathology, Microbiology & Immunology 129Y………………… 3
VM Medicine and Epidemiology 158……… 3
Global Disease Biology 101, 102………………… 8
Two courses from Plant Pathology 120; Pathology, Microbiology 127, 128; Microbiology 162, Entomology 153, 156/156L, Global Disease Biology 103…………………………… 6-9
Global Disease Biology 187………………… 3
Global Disease Biology 189………………… 3

Restricted Electives …………………………… 25
Focused specially upper division courses as outlined in the student’s major proposal (from course 187) with approval of an adviser.

Total Units for the Degree …………………………… 125-134

Recommended:
Biological Sciences 101………………… 1
Global Disease Biology 189………………… 1

Minor Program Requirements:

A minor in Global Disease Biology may complement student’s major program. Some courses have required prerequisites not included as part of the minor, and students should plan accordingly.

UNITS

Global Disease Biology …………………… 20-22
Science and Society 13………………… 3
Pathology, Microbiology & Immunology 129Y………………… 3
VM Medicine and Epidemiology 158………………… 3
Global Disease Biology 101, 102………………… 8
One course from: Plant Pathology 120; Pathology, Microbiology & Immunology 127, 128; Microbiology 162, Entomology 153, 156/156L, Global Disease Biology 103…………………………… 3-5

Minor Program Advisor: TBD

Advising Center for the minor is located in 152 Hutchison Hall 530-754-7727.

Global and International Studies

Changes to the Minor Program Requirements

The minor is overseen by a Program Committee. For more information, see http:// studyabroad.ucdavis.edu/students/.

Minor Program Requirements:

UNITS

Global and International Studies …………………… 23-25
Arts and Humanities Emphasis

One course from: Anthropology 4, 20, International Relations 1, Political Science 3 or Sociology 5………………… 3-4
One upper division UC Davis general course on global international studies………………… 3-4
See program advisor for a list of approved courses.

Course cluster requirement………………… 16-17

The minor requires the selection of interrelated courses totaling a minimum of 16-17 upper division courses in global international studies or thematic course clusters in global and international studies. Suggested course clusters include:

(1) Country or region-specific courses: Western Europe; Russian and East/Central Europe; Asia and the Pacific; Latin and South America; Africa and the Middle East; Jewish Studies; specific countries.

or

(2) Courses clustered around a thematic held in global and international studies: people and nationalities, the individual and society, arts, language, literature and culture.

Study Abroad and International Internships

The course cluster requirement may be met in one of two ways: (1) completion of a minimum of 16-17 units in the course cluster emphasis by taking approved UC Davis upper division courses in the area of global/international studies and or approved upper division courses taken while participating in UC Study Abroad or another approved study abroad program, or (2) completion of 12 units of course work in a UC Davis accredited international internship, plus UC Davis courses sufficient to total 16-17 units. Students must meet with the GIS advisor and complete a Course Cluster Worksheet to demonstrate subject interrelatedness.

Restrictions: No more than two courses from a single UC Davis Department may be offered in satisfaction of the minor requirements.

Pre-Fall 2011 General Education (GE): ArtHum—Arts and Humanities; SciEng—Science and Engineering; SocSci—Social Sciences; DivDom—Domestic Diversity; Wrt—Writing Experience

ACGH—American Cultures; DD—Domestic Diversity; OL—Oral Skills; QL—Quantitative; SL—Scientific; VL—Visual; WC—World Cultures; WE—Writing Experience

Quarter Offered: F—Fall, W—Winter, S—Spring, Su—Summer, 2015-2016 offering in parentheses
**Human Development**

**Changes to the Minor Program Requirements**

**The Major Program**

Human development explores the developmental process in humans throughout the life cycle. Biological, cognitive, and personality/sociocultural aspects of development are studied.

**The Program.** Human development majors complete a group of preparatory courses in anthropology, general biology, genetics, history, philosophy, physiology, psychology, and statistics. Upper division students can design their programs in consultation with a faculty member to emphasize particular areas of interest. For instance, students can study the cognitive, social, and biological aspects of human development while emphasizing child or adult development.

**Internships and Career Alternatives.** At least one practicum course is required. A second practicum or supervised internship may be used to fulfill requirements for the minor.

**Foreign Language Study.** Students are strongly encouraged to study a foreign language, particularly the language of the country in which and about which they intend to study. However, only upper division coursework may be used to fulfill requirements for the minor.

**Minor Program Requirements:**

**UNITS**

**Indi a & South Asia Studies**

**New minor in India & South Asia Studies**

**College of Letters & Science**

The minor in India & South Asia Studies covers an area of immense historical, cultural, economic, demographic, and geopolitical significance. The minor is designed to emphasize the interconnected and comparative aspect of history, culture, society, economy, religion, gender relations, media, law, political economy, international relations, urbanism, migration and diaspora, language and literatures across regional and national boundaries. It is an interdisciplinary minor open to undergraduates in all four colleges.
International Agricultural Development

Changes to the International Agricultural Development major

B.S. Major Requirements:

Preparatory Subject Matter.................. 36-38

Internship Requirement........................ 4

Total Units for Major........................116-134

International Relations

Changes to the International Relations Major Requirements

A.B. Major Requirements:

Preparatory Subject Matter.................. 28-54

Internship Requirement ...................... 4
Area Studies Requirement
Four courses: Courses must incorporate at least two of three groups (History, Social Analysis, Culture and Literature): we encourage students to take all four courses from one region and will accept a minimum of three from one region and one from a different region. Tracks I, II, and III students who choose to take advantage of an Education Abroad experience may fulfill the Area Studies requirement by completing three courses instead of four; all three courses must be from one region.

Africa and the Middle East
Culture and Literature: African American and African Studies 153, 157, 162, Art History 150, Comparative Literature 147, 166, Dramatic Art 155A, French 124, Jewish Studies 111
East and South Asia
History: History 191E, 191F, 194C, 194D, 194E, 195B, 196B
Latin America
History: History 159, 162, 163B, 164, 165, 166B, 167, 168
Russian and East/Central Europe
History: History 138B, 138C, 143
Social Analysis: Political Science 144A, 144B
Culture and Literature: Russian 123, 124, 129, 130, 133, 150
Western Europe
History: History 140, 141, 142A, 144B, 145, 146A, 146B, 147B, 147C, 151D
Total units for the major: 64-102
Major Adviser: Daniel Kono (Political Science)
Managerial Economics

Changes to the B.S. Major Requirements

The Major Program

The Managerial Economics major at UC Davis is a discipline program combining strong preparation in microeconomic theory and quantitative methods. It prepares students for the analysis of management and policy issues in business, finance, marketing, production, agriculture, food distribution, natural resources, the environment, resource allocation, and international trade and development. Students specialize in one of four options: (1) Business Economics focuses on the economic aspects of managerial decision-making. (2) International Business Economics explores the economic drivers and policy challenges in the major emerging markets. Topics include the role of rising incomes, population growth, urbanization and relative wages on world markets and natural resources. Focus is on how emerging markets are impacting the world economy. (3) Environmental and Resource Economics concentrates on issues related to the use of resources and environmental quality. (4) Agricultural Economics focuses on the economic and policy aspects of production and marketing of foods and fibers.

Students in the Managerial Economics program develop valuable skills and strengths that lead to careers in business. Internships and Career Alternatives. Students in the Managerial Economics program have opportunities to gain additional career information and preparation through internships in a variety of private business and governmental agencies. Graduates qualify for supervisory and management training positions in banking, finance, commodity and stock brokerage in the private sector, farm and ranch production, food and agricultural processing, sales and service, and a variety of positions in local, state, and federal government. Graduates are well qualified to seek advanced degrees in agricultural and resource economics, economics, business administration, public policy, or law. For more information, see http://acsec.ucdavis.edu.

Study Abroad. The Agricultural and Resource Economics department encourages students who would like to complement their Managerial Economics degree with a study abroad experience. Up to eight units of upper division credit (excluding core courses) from international campuses may be used towards the completion of the degree or the minor.

To ensure that such courses will apply towards the Managerial Economics degree or minor, students need to select courses from the pre-approved list at UC Davis Study Abroad or seek pre-approval in the Agricultural and Resource Economics department for the courses they wish to complete abroad.

Graduate Study. Students who meet the admission requirements of Graduate Studies and the Department of Agricultural and Resource Economics may pursue studies leading to M.S. and Ph.D. degrees. For information on admission to graduate study, degree requirements, consult the Graduate Program Coordinator in the Department of Agricultural and Resource Economics; also see http://agecon.ucdavis.edu.

B.S. Major Requirements:

Major English Requirement ..................... 8
Choose one course from: Communications
1 or 3 .................................................. 4
University Writing Program 104A ............... 4
[The upper-division composition exam will not satisfy this requirement.]

Preparatory Subject Matter ................. 39-41
Agricultural and Resource Economics 18 ... 4
Economics 1A-1B .................................. 8
One course from: Plant Sciences 21,
Engineering Computer Science 10, 15 or
30 ..................................................... 3-4
Management 11A-11B .......................... 8
Mathematics 16A-16B-16C, 17A-17B, or
21A-21B ........................................... 8-9
Statistics 11, 103 .................................. 8
Total Depth Subject Matter ............. 52-55

Core .................................................. 20
Agricultural and Resource Economics 100A,
100B, 106, 155 and Economics 101

Restricted Electives ......................... 32-35
Choose at least one of the options below:

Business Economics option
Choose at least 16 units from: Agricultural and Resource Economics 112, 118, 119,
136, 157, 171A, 171B.
Select the remaining 16 units from the above list or from Agricultural and Resource Economics 115A, 115B, 120, 121, 130,
132, 138, 139, 140, 143, 144, 145,
146, 150, 156, 176, 176, 194HA-
194HB, Economics 116A, 116B,
121A, 121B, 151A, 151B, 160A,
160B, 160C.

International Business Economics option
Choose at least 20 units from Agricultural and Resource Economics 118A, 118B,
138, 139, 146, Economics 115A, 115B,
Select the remaining 12 units from the above list or from International Business Economics 130A, 171A, 171B, 175, 176,
Economics 121A, 121B, Political Science 121B.

Environmental and Resource Economics option

Pre-Fall 2011 General Education (GE): Arthum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Diverse; Wrt=Writ=Writing Experience; Fall 2011 and on Revised General Education (GE): AH=Arts and Humanities; SS=Science and Engineering; SS=Social Sciences; ACH=American Cultures; DD=Diverse Diversity; OL=Oral Skills; QU=Quantitative; SL=Scientific; VL=Visual; WC=World Cultures; WE=Writing Experience; Quarter Offered: F-Fall, W-Winter, S-Spring, Su-Summer; 2015-2016 offering in parentheses.
Agricultural and Resource Economics 175 and 176 .............. 8

Agricultural Economics option
Choose at least 16 units from Agricultural and Resource Economics 120, 121, 130, 132, 138, 139, 140, 145, 150. Select the remaining 16 units from the above list or upper division courses in Agricultural and Resource Economics and/or Economics.

Select the remaining 16 units from the above list or upper division courses in Agricultural and Resource Economics and/or Economics.

*Students must attain a major GPA of at least a C average (2.000) in courses taken for depth subject matter. These courses must be taken for a letter grade. All restricted elective courses taken will be calculated as part of the major GPA, including courses with F grades that have not been repeated.

Total Units for the Major................... 99-104

Minor Program Requirements: UNITS

Managerial Economics.......................... 24
Agricultural and Resource Economics 100A, 100B, and 106 ............. 12
At least 12 units from the following Agricultural and Resource Economics 107, 112, 130, 136, 138, 139, 143, 145, 146, 150, 155, 156, 157, 171A, 171B, 175, 176.

Prerequisites for courses taken for the minor are required and students should plan accordingly. One upper division class to satisfy the minor may be taken for Passed/Not Passed grading. All minor courses must be taken in residence; no more than two pre-approved study abroad courses are allowed.

Mathematics

New major in Mathematical Analytics and Operations Research B.S. Major Requirements:

Preparatory Subject Matter ............... 43-50
Mathematics 12 (or high school equivalent) .................................. 0.3
One of the following two options:
a) Mathematics 22A and 108
b) Mathematics 67 ........................................ 4.7
Mathematics 22AL or equivalent basic knowledge of MATLAB（2011 and on only） 0.1
Computer Science 30 ........................ 4
Economics 1A, 18 ........................................ 8
Statistics 32 or 103 ................................. 4

NOTE: Basic knowledge of MATLAB is required for both 22A and 67. Students can learn it on their own, enroll in Engineering 6, Mechanical Engineering 5, or in the one unit course Mathematics 22AL (can be taken concurrently).

Depth Subject Matter .......................... 51-55
A. Entry Level (Optional) ...................... 0.4
B. Core ........................................... 35
Mathematics 125A, 125B ....................... 8
Mathematics 135A, 135B ....................... 8
Mathematics 150A ............................... 4
Mathematics 160 ............................... 4
Mathematics 168 ............................... 4
Mathematics 189 ............................... 3
C. Enrichment Courses ......................... 16
2. Choice of 2 courses from Mathematics 100, 121A, 121B, 122, 134, 140, 145, Agricultural and Resource Economics 155, 156, 157 ... 8

Total Units for the Major .......................... 94-105

Molecular and Cellular Biology

Changes to the Genetics and Genomics Major Program

B.S. Major Requirements: UNITS

Preparatory Subject Matter ................. 56-66
Biological Sciences 2A-2B-2C ................ 15
Chemistry 2A-2B-2C or 2AH-2BH-2CH .... 15
Mathematics 115 .................................. 6.12
Mathematics 17A-17B-17C or 21A-21B (21C recommended) .......................... 8-12
Physics 7A-7B .................................. 12

Depth Subject Matter .......................... 40-43
Biological Sciences 101, 102 +103 (or 105), 104 .............................................. 1013
Molecular and Cellular Biology 121, 122 ................................. 8
Evolution and Ecology 100 or Biological Sciences 181 .................. 3.4
Molecular and Cellular Biology 164 or Biological Sciences 183 ........... 3
Molecular and Cellular Biology 160L or Biological Sciences 180L ...... 5
Statistics 100 or 130A-130B .................. 4-8
Restricted Electives ................................. 9
Select at least nine additional units from the following:
Biological Sciences 134, 181, 183
Biotechnology, Engineering: Computer Science 124
Evolution and Ecology 100, 102, 131, 150, 161, 175
Microbiology 105, 150, 170
Molecular and Cellular Biology 150, 162, 163, 164
Plant Biology 112, 113
Plant Science 153
Or upper division courses in genetics or other fields relevant to the student’s interest chosen in consultation with the adviser. No more than 4 units of 192, 193, 199, or 199 may be used for credit in this category.

Total Units for the Major .......................... 96-114

Music

Changes to the Music Major & Minor Program

A.B. Major Requirements:

Preparatory Subject Matter .................. 27-45
Music 6A, 6B, 6C ................................. 9
Plus Music 2A, 2B, 2C ......................... (0-6)*
And Music 16A, 16B, 16C ................... (0-6)*
Music 7A, 7B, 7C ................................. 9
Plus Music 17A, 17B, 17C ................... (0-6)*
Music 24A, 24B, 24C ......................... 9
* May be excused by diagnostic examination at the beginning of each year.

Depth Subject Matter ......................... 40-43
Choose upper division courses from one of the following tracks:
Track 1: Music Composition .................. 42
Music 123, 124A, 124B .......................... 9
Music 121 or 122 ................................. 4
Music 131 (one year) ......................... 6
Music 195 ........................................... 2
At least 6 units selected from: Music 140, 151 ...
Music 101A, 101B ................................. 8
Music 103 ........................................... 3
At least 4 further units selected from:

Track 2: Music History, Theory, and Ethnomusicology ............ 43
Music 123, 124A, 124B .......................... 9
Music 121 and/or 122 ......................... 8
Need eight units of seminar courses chosen from above in any combination. Note:
Music 121 and 122 may be repeated for credit.
Music 131, one year ........................... 6
Music 195 ........................................... 2
At least 6 units selected from: Music 140, 151 ...
At least 12 further units selected from:

Track 3: Music Performance .................. 40
Music 123, 124A, 124B .......................... 9
Music 121 or 122 ................................. 4
Music 131 (one year) ......................... 6
Music 195 ........................................... 2
At least 13 units selected from: Music 131, 140-151 ...
At least 6 further units selected from:

Total Units for the Major .......................... 64-85

Note: A maximum of 19 units in performance courses (Music 131, 140-151) apply toward the degree. see Unit Credit Guidelines, College of Letters and Science degree requirements section. Faculty of the College of Letters and Science bylaws makes it possible for students to take more than 19 units of performance classes. No additional units counting toward the 225-unit cap on units.
Composition Honors .................................. 46-50
Math, 101A, 101B .................................. 8
Music 123, 124A, 124B .......................... 9
Music 103 .......................................... 3
Music 121 or 122 .................................... 4
Music 121 (year) ..................................... 6
At least six units selected from: Music 140, 141 .................................................. 151 Two quarters of Music 194H for a total of at least six units resulting in a Senior thesis ................................................. 6
Music History, Theory and Ethnomusicology Honors ........................................ 47
Music 123, 124A, 124B .......................... 9
Music 121 or 122 [twice] ......................... 8
Music 131 (one year) ................................. 6
At least 6 units selected from: Music 140, 141 .................................................. 151 Two quarters of Music 194H for a total of at least six units resulting in a Senior thesis ................................................. 6
A student becomes eligible for graduation with honors by meeting the minimum GPA and course requirements established by the College of Letters and Science. To qualify for high or highest honors, students must also complete the Music Department honors program with a GPA of 3.500 or above and write a thesis or submit a portfolio that meets the criteria for high honors or highest honors. Students apply to participate in the department honors program during the latter part of their junior year. Admission to the program is based on GPA, a thesis proposal, examples of previous writing, and the recommendation of a faculty member who is willing to sponsor the student’s project. Students who anticipate seeking admission to the honors program are urged to complete at least one offering of Music 121 or 122 before the end of their junior year. Interested students are urged to consult with faculty in their field early in their junior year.
Major Advisers. C. Reynolds (AF), A. Triest (GM), L. San Martin (N2).

Minor Program Requirements:

Music ................................................. 22
A minimum of 6 units of upper division music courses .................................................. 16
A minimum of six units in upper division music performance courses .................................. 6
Courses chosen from: Music 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151

Natural Sciences

Changes to the Natural Sciences Major Requirements

B.S. Major Requirements:

Preparatory Subject Matter .................................. 68-74
Chemistry 2A, 2B, 2C .................................. 11
Chemistry 2A, 2A, 2C .................................. 15
Biological Sciences 2A, 2B, 2C ..................... 11
Geology 2, 3, 3L, 50, 60 .............................. 13
Mathematics 16A, 16B, 16C or 17A, 17B, 17C or 21A, 21B, 21C .......................... 9-12

Physics 7A, 7B, 7C or 9A, 9B, 9C .......................... 12-15
Statistics 106 ........................................... 4

Depth Subject Matter .................................. 42
Concentration: chosen from among the four fields of concentration listed below .................................................................................. 27
Supplementary Field: chosen from among the four fields listed below. May not include the same field as a Concentration. The same course may not be used to fulfill the requirements for both a Concentration and a Supplementary Field .................................................. 13

Total Units for the Major .................................. 110-116

Fields of Concentration:

Chemistry ........................................... 27-36
Chemistry 105 .......................................... 4
Chemistry 107A-107B or 110A-110B-110C .................................................. 6-12
Chemistry 118A-118B or 128A-128B-129A-129B .................................................. 8-10
Chemistry 124A .......................................... 3
One course from Chemistry 100, 104, 118B, 128C .................................................. 3-4
Three units from Chemistry 197, 199 or Education/Geology 181, 183 .......................... 3

Earth Science ........................................... 27
One course from Geology 107, 108, 131 .................................................. 3
Three units from Geology 199 or Education/Geology 181, 183 .......................... 3

Life Science ........................................... 27-33
Chemistry 8A, 8B or 118A, 118B, 118C .................................................. 6-12
Biological Sciences 101 .................................. 4
Evolution and Ecology 100, 101 or approved electives and Biological Sciences 105, 115, 118 .................................................. 8
Neurobiology, Physiology, and Behavior 101 .................................................. 5
Four units from Biological Sciences 199, Evolution and Ecology 199, Molecular and Cellular Biology 199, or Neurobiology, Physiology, and Behavior 199 or Education/Geology 181, 183 .......................... 4

Physics ................................................. 27
Chemistry 107A, 110A .................................. 7
Geology 161, 162, 163 .............................. 9
Four units from Physics 199 or Education/Geology 181, 183 .......................... 4

Supplementary Fields:

Chemistry ........................................... 15-17
Chemistry 100 .......................................... 3
Chemistry 104 or 105 .................................. 3-4
Chemistry 107A .......................................... 3
Chemistry 118A or 128A .................................. 3-4
Chemistry 124A .......................................... 3
Other Chemistry or related science courses may be substituted with the prior approval of the major adviser.

Earth Science ........................................... 15
Geology 108, 109, 109L, 110L, 110N .................................................. 4
Geology 138 or 140 ..................................... 4
Approved electives .................................. 1
Other Geology or related science courses may be substituted with the prior approval of the major adviser.

Life Science ........................................... 15
Biological Sciences 101 .................................. 4
Evolution and Ecology 100 .................................. 4
Neurobiology, Physiology, and Behavior 101 .................................................. 5
Approved electives .................................. 2
Other Biological Sciences or related science courses may be substituted with the prior approval of the major adviser.

Physics ................................................. 15
Physics 108 .......................................... 3
Chemistry 107A .......................................... 7
Geology 161, 162, 163 .................................. 9
Approved electives .................................. 2

Other Physics or related science courses may be substituted with the prior approval of the major adviser.

*Note: Students pursuing a concentration in earth science or physics may not have had the necessary prerequisites in organic chemistry.


Philosophy

Changes to the Philosophy A.B. Major Requirements

The Major Program

Philosophy addresses problems and questions that arise in all areas of human thought and experience and in all disciplines. Recurring questions about the nature of value, the good life, right conduct, knowledge, truth, language, mind, and reality are central to philosophical study. Philosophy also investigates the methodologies and assumptions of the major disciplines in the university in order to deepen our understanding of the sciences, of mathematics, art, literature, and history, and of religion and morality. It leads us to address issues about the nature of these subjects, about the methods of reasoning characteristic of them, and about the contributions they make to our understanding of ourselves and our world.

Philosophy contributes to the liberal education of its students. The department emphasizes an analytic approach to philosophical questions, which trains students to understand and evaluate arguments and to think and write precisely and clearly. These skills are of immense value in a variety of careers.

The Program. The Department of Philosophy offers its majors a choice among three options. The General Emphasis provides a broad view of the field of philosophy. It includes a breadth requirement at the lower division level while providing students wide choice in more advanced courses. The Pre-Law and Pre-Med Emphases include courses that provide philosophical perspective on law and medicine respectively and that also provide important preparation for professional school.

The Department offers courses in most areas of contemporary analytic philosophy including the theory of knowledge, metaphysics, ethics, and political philosophy. In addition, upper division courses are offered in moral and political philosophy, and aesthetics, and in the philosophy of religion, of mind, of language, of mathematics, of law, and of the physical, biological and social sciences. The problems of philosophy have important roots in past. The history of philosophy is important not only as part of the heritage of all persons, but also because it is relevant to contemporary issues. For these reasons, the department places great emphasis on the history of philosophy, providing courses on the major figures and traditions of western philosophy.

Career Alternatives. Students of philosophy learn to understand and evaluate arguments and to think and write precisely and clearly. These analytical skills are assets in any career. Many of our majors have pursued graduate study in philosophy and have become philosophers in their own right. Others have pursued academic careers in related disciplines in the humanities, the social sciences, and the sciences. Philosophy majors are well prepared for law, business, or other professional schools and have found careers in computer programming, government service, teaching, the ministry, and social work. Those wishing to attend law school or medical school should considering pursuing the Pre-Law and Pre-Med emphases, respectively.
A.B. Major Requirements:

General Emphasis

Preparatory Subject Matter ........................ 16
One course from any of the following areas:................................. 12
(a) Ancient Philosophy: Philosophy 1
(b) Early Modern Philosophy: Philosophy 22
(c) Philosophy of Mind: Philosophy 13G
(d) Ethics: Philosophy 14, 15 or 24
(e) Philosophy of Science: Philosophy 30, 31, 32 or 38
(f) Philosophy of Language: Philosophy 17
(g) Metaphysics: Philosophy 101
(h) Theory of Knowledge: Philosophy 102
Philosophy 12 ........................................... 4

Depth Subject Matter .................................. 36
Upper division units in Philosophy .............................. 36
Note: Philosophy 101 and 102 may not be counted toward both preparatory and
depth subject matter units.

Total Units for the Major ............................... 52

Pre-Law Emphasis

Preparatory Subject Matter .......................... 16
One course from any of the following three:................................. 4
Philosophy 14, 15, or 16
Philosophy 12 ........................................... 4
Philosophy 24 ........................................... 4

Depth Subject Matter ................................... 36
Any three courses from the following six:................................. 12
Philosophy 102, 116, 118, 128, 189C, or 189F
Philosophy 112 ........................................... 4
Philosophy 119 ........................................... 4
Additional upper division elective units in
philosophy ..............................................16

Total Units for the Major ............................... 52

Pre-Med Emphasis

Preparatory Subject Matter .......................... 16
One course from any of the following four:................................. 4
Philosophy 24, 30, 31, or 32
Philosophy 12 ........................................... 4
Philosophy 15 ........................................... 4
Philosophy 38 ........................................... 4

Depth Subject Matter ................................... 36
One course from any of the following four:................................. 4
Philosophy 107, 108, 128, 189H
Philosophy 112 ........................................... 4
Philosophy 121 ........................................... 4
Additional upper division elective units in
philosophy ..............................................24

Total Units for the Major ............................... 52

Note: Admission to medical schools requires additional coursework not included in the Pre-Med Emphasis.

Major Advisers, G.J. Mattey, Marina Oshana

Advising Office, 1240 Social Science and Humanities

Political Science

Changes to the Political Science

Minor Program Requirements:

Students electing a minor in Political Science need to take six upper division Political Science courses.

UNITs

Science and Technology Studies

Changes to the Science and Technology Studies

A.B. Major Requirements

UNITs

Preparatory Subject Matter .......................... 16
Science and Technology Studies 1 .................. 4
Science and Technology Studies 2 .................. 4
Science and Technology Studies 3 .................. 4
Science and Technology Studies 4 .................. 4
Science and Technology Studies 5 .................. 4
Science and Technology Studies 6 .................. 4
Science and Technology Studies 7 .................. 4
Science and Technology Studies 8 .................. 4
Science and Technology Studies 9 .................. 4
Science and Technology Studies 10 ................. 4
Science and Technology Studies 11 ................. 4
Science and Technology Studies 12 ................. 4

Total Units for the Major ............................... 60-80

Approved Science Electives.

Students must meet the core requirements: Aeronautical Science and Engineering; Animal Genetics; Animal Science; Anthropology; Applied Behavioral Sciences; Applied Biological Systems; Atmospheric Science; Avian Sciences; Biological Chemistry; Biological Sciences; Cell Biology and Human Anatomy; Chemistry; Earth & Planetary Sciences; Engineering; Engineering: Applied Science; Engineering: Biological Systems; Engineering: Chemical; Engineering: Civil and Environmental; Engineering: Computer Science; Engineering: Electrical and Computer; Engineering: Mechanical; Entomology; Environmental and Resource Sciences; Environmental Horticulture; Environmental Science and Policy; Environmental Toxicology; Evolution and Ecology; Exercise Science; Fiber and Polymer Science; Food Science and Technology; Geology; Hydrologic Science; Material Science and Engineering; Medical Microbiology; Medical Pharmacology and Toxicology; Microbiology; Molecular and Cellular Biology; Nematology; Neurobiology; Physiology, and Behavior; Nutrition; Pathology, Microbiology, and Immunology; Physics; Plant Biology; Plant Pathology; Population Health and Reproduction; Psychology; Soil Science; Wildlife, Fish, and Conservation Biology.

Major Adviser, J. Dumit

Theatre and Dance

Changes to the Theatre and Dance

The Theatre and Dance Major

Program

The A.B. degree in Theatre and Dance provides students with an appreciation for and understanding of performance and its role in culture and society. The program offers a strong foundation in all aspects of drama, theatre, dance performance, and production. Students build significant skills in specific areas (including acting, directing, choreography, design, playwriting and devising, production skills and management) as well as achieving a broad knowledge of theatre and dance.

Productions and Facilities. Each year’s schedule includes opportunities to work with professional directors and choreographers in three Granada Artists-in-Residence productions; the Main Stage and Dance/Theatre Festival; the UC Davis Film Festival; projects generated through the Institute for Exploration in Theatre, Dance and Performance; and workshops and performance projects developed by M.F.A. and Ph.D. students. These productions are staged in our prosenium (Main), thrust (Wyatt), black box (Arena), performance studio (Nelson Hall) and intimate laboratory theatre (Lab A), as well as in the Mondavi Center’s Vanderhoef Studio Theatre and Jackson Hall. These productions are part of the academic program of the department and serve an important purpose in the study of theatre and dance. Participation is open to all students.
Wildlife, Fish, and Conservation Biology

Changes to the Wildlife, Fish, and Conservation Biology Program

B.S. Major Requirements:

<table>
<thead>
<tr>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written/Oral Expression</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Entomology 116</td>
</tr>
<tr>
<td>Ecology 107, 115, 138, 147, Environmental Horticulture 103</td>
</tr>
<tr>
<td>Evolution and Ecology 101</td>
</tr>
<tr>
<td>Biology 120</td>
</tr>
<tr>
<td>Wildlife, Fish, and Conservation Biology 101, 102</td>
</tr>
</tbody>
</table>

Preparatory Subject Matter

<table>
<thead>
<tr>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology 2A, 2B, 2C</td>
</tr>
<tr>
<td>Chemistry 2A, 2B, 8A, 8B</td>
</tr>
<tr>
<td>Mathematics 16A, 16B</td>
</tr>
<tr>
<td>Physics 1A</td>
</tr>
<tr>
<td>Statistics 100, 101, or Plant Sciences 410</td>
</tr>
<tr>
<td>Wildlife, Fish, and Conservation Biology 101, 102</td>
</tr>
</tbody>
</table>

Depth Subject Matter

<table>
<thead>
<tr>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entomology 116</td>
</tr>
<tr>
<td>Wildlife, Fish, and Conservation Biology 120, 121A</td>
</tr>
</tbody>
</table>

Total Units for the Major: 80

Major Adviser: Consult Department Office.

Minor Program Requirements:

<table>
<thead>
<tr>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparatory Subject Matter</td>
</tr>
<tr>
<td>Depth Subject Matter</td>
</tr>
<tr>
<td>Transfer Students: As described above, all students completing a major in Theatre and Dance must participate in dramatic productions, including work in at least two of the following three areas: acting/dance/design (scenic, costume, lighting, painting, props, sound); directing/playwriting/stage management as well as crew assignments for a minimum of two productions while in residence at UC Davis. Transfer students should see the major adviser for an evaluation of your previous experience.</td>
</tr>
<tr>
<td>Guest Artists: The Granada Visiting Artists Program brings distinguished professional artists to the campus each year, to be in residence for a quarter. These working professionals interact closely with students in the classroom and rehearsal halls and provide them excellent pre-professional experiences of theater practice.</td>
</tr>
</tbody>
</table>

Areas of Specialization

(1) Wildlife and Conservation Biology: Complete Wildlife, Fish, and Conservation Biology 151
(2) Fish Biology: Complete Wildlife, Fish, and Conservation Biology 120 & 120L
(3) Wildlife Health: Complete Wildlife, Fish, and Conservation Biology 151

Note: Students interested in certification as a Wildlife Biologist from The Wildlife Society should consider additional courses in plant sciences.

Additional Preparatory (recommended, not required): Chemistry 2C, 118A, 118B, 118C, Physics 7A, 7B, 7C.
(4) Individualized: Students may, with prior approval of their adviser and the curriculum committee, design their own individualized specialization within the major. The specialization will consist of four upper division courses with a common theme.

**Total Units for the Degree** ........... 114-133

**Major Adviser.** N. A. Fangue

Students transferring to UC Davis from another institution or new students declaring the major of Wildlife, Fish, and Conservation Biology must consult the Master Adviser so that their program can be evaluated and a faculty adviser assigned. Contact the Department in 1088 Academic Surge Building or telephone 530-754-9796.

**Minor Program Requirements:**

The minor in Wildlife, Fish, and Conservation Biology is for students interested in basic training and understanding of the ecology and conservation of wild terrestrial and aquatic vertebrates, emphasizing birds, mammals, and fish, but with relevance and application to all life forms.

**UNITS**

Wildlife, Fish, and Conservation Biology ........................................... 20-31

Wildlife, Fish, and Conservation Biology 100, 151, and 154

Choose one course from: 110, 111, 120 or 134....................................................15

Two-four upper division elective courses chosen from the Wildlife, Fish, and Conservation Biology curriculum, excluding Wildlife, Fish, and Conservation Biology 190, 191, 192, 195, 197T, 198, & 199................................................. 5-16

**Minor Adviser.** N. A. Fangue