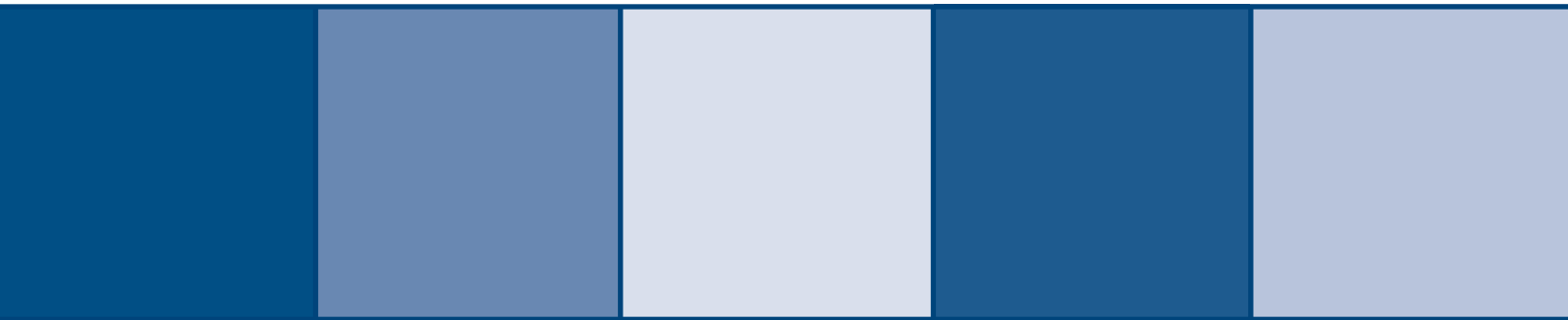


**2005-2006**

GENERAL CATALOG  
SUPPLEMENT

**VERSION 1.9, FINAL**

**UCDAVIS**



**OFFICE OF THE UNIVERSITY REGISTRAR**

# Version History

The following is a record of each version and the changes made for that version:

## Version 1.0, released: 6.1.2005

- Original version.

## Version 1.1, released: 7.1.2005

- Made various minor text changes and fixes.
- Added text reflecting changes to Minimum Progress Regulations under Academic Information.
- Added clarifying statement to all English classes replaced by University Writing Program classes.
- Added Nutrition program name change.
- Modified English Composition Requirement in the College of Engineering section.
- Added Civil Engineering/Materials Science and Engineering major cancellation.
- Added Computer Science major and minor program changes.
- Added Engineering: Computer Science upper division course changes to major program.
- Added the following sections:
  - Computer Science
  - Engineering: Material Science (EMS)
  - Geography (GEO)
  - Medicine: Epidemiology and Preventive Medicine (EPP)
  - Medicine: Internal Medicine (IMD)
  - Physics (PHY)
  - Spanish (SPA)
- Added the following course descriptions:
  - Art Studio (ART) 138, 151, 153, 154
  - Chicana/Chicano Studies (CHI) 123
  - Design (DES) 13, 16, 134B, 134C, 139, 145, 180C
  - Dramatic Art (DRA) 156D
  - Engineering: Biomedical (BIM) 198
  - Engineering: Computer Science (ECS) 166
  - Engineering: Material Science (EMS) 245
  - Environmental Toxicology (ETX) 30
  - Evolution and Ecology (EVE) 150
  - Genetics (GGG) 292A, 292B, 292C, 292D
  - Geography (GEO) 210
  - Geology (GEL) 293
  - Humanities (HUM) 298
  - Landscape Architecture (LDA) 299
  - Law (LAW) 269A
  - Medicine: Epidemiology and Preventive Medicine (EPP) 495
  - Medicine: Internal Medicine (IMD) 401A
  - Music (MUS) 195
  - Physics (PHY) 265
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  - Veterinary Medicine: Medicine and Epidemiology (VME) 428, 461, 468
  - Veterinary Medicine: Pathology, Microbiology, and Immunology (PMI) 275, 283
  - Veterinary Medicine: Population Health and Reproduction (PHR) 106, 111, 225, 232
  - Veterinary Medicine: Surgical and Radiological Sciences (VSR) 415, 416, 416L, 450, 461L, 469
  - Wildlife, Fish, and Conservation Biology (WFC) 293
- Changed the following course descriptions:
  - Science and Society (SAS) 25
  - Geology (GEL) 136

## Version 1.2, released: 8.1.2005

- Added Health Insurance (SHIP) Coverage and Refund of SHIP Fees section under Undersgraduate Education.
- Added the following sections:
  - Animal Biology (A Graduate Group) (ABG)
  - Astronomy (AST)
  - Biological Sciences (BIS)
  - Chemistry (CHE)
  - Economics (ECN)
  - Engineering: Chemical and Material Science (ECM)
  - Epidemiology (EPI)
  - Forensic Science (FOR)
  - Hebrew (HBE)
  - International Agricultural Development (IAD)
  - Medical Informatics (MDI)
  - Neuroscience (NSC)
- Added the following course descriptions:
  - African American and African Studies (AAS) 172
  - American Studies (AMS) 25, 55

- Animal Biology (A Graduate Group) (ABG) 200A, 200B, 290, 290C, 299, 300, 396, 401
- Animal Science (ANS) 259
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- Art Studio (ART) 152
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- Biological Sciences (BIS) 20Q
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- Dramatic Art (DRA) 155B, 224A, 224B, 224C, 224D, 224E, 225
- Economics (ECN) 204, 209A, 209B, 209C
- Economy, Justice & Society (EJS) 117, 207, 209A, 209B, 209C
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- Engineering: Chemical and Material Science (ECM) 261
- Engineering: Civil and Environmental (ECI) 143, 147, 148B, 206
- Engineering: Computer Science (ECS) 230, 279
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- Linguistics (LIN) 182, 264
- Medical Informatics (MDI) 202, 210, 211
- Microbiology (MIC) 105, 105L
- Neurobiology, Physiology and Behavior (NPB) 101, 165, 292
- Neuroscience (NSC) 201
- Nutrition (A Graduate Group) (NUT) 219A
- Philosophy (PHI) 157
- Physics (PHY) 240C, 240D, 262, 263, 266, 270, 285
- Plant Pathology (PLP) 205A, 205B
- Political Science (POL) 280, 281, 282, 290G
- Psychology (PSC) 135
- Religious Studies (RST) 68, 168
- Science and Technology Studies (STS) 161
- Veterinary Medicine (VMD) 400, 400A-B, 415A-C, 430, 433, 447, 460, 490B
- Veterinary Medicine: Anatomy, Physiology and Cell Biology (APC) 284, 484
- Veterinary Medicine: Pathology, Microbiology, and Immunology (PMI) 291B
- Veterinary Medicine: Population Health and Reproduction (PHR) 212, 420
- Veterinary Medicine: Preventive Veterinary Medicine (MPM) 408A, 408B, 412
- Veterinary Medicine: Surgical and Radiological Sciences (VSR) 404A, 408, 413L, 424, 491, 491R, 493, 493R

## Version 1.3, release date: 9.1.2005

- Modified Design B.S. requirements.
- Modified Biotechnology Major B.S. requirements.
- Modified Science and Technology Studies Major requirements.
- Added the following sections:
  - Latin American and Hemispheric Studies (LAH)
  - Molecular, Cellular, and Integrative Physiology (A Graduate Group) (MCP)
  - Plant Biology (A Graduate Group) (PBI)
  - Sexuality Studies (SXS)
- Added the following course descriptions:
  - African American and African Studies (AAS) 185
  - Agricultural and Resource Economics (ARE) 204, 239
  - Chemistry (CHE) 204, 209, 231A, 231B, 280
  - Dramatic Art (DRA) 111S, 144, 146A, 146B, 146C, 151S
  - Economics (ECN) 239
  - Engineering: Biomedical (BIM) 108
  - Engineering: Chemical and Material Science (ECM) 280
  - Engineering: Civil and Environmental (ECI) 261
  - Engineering: Computer Science (ECS) 272
  - Geology (GEL) 131
  - Human Development (HDE) 15, 151
  - International Agricultural Development (IAD) 110, 111
  - Mathematics (MAT) 201A, 201B, 201C
  - Medicine: Medical Microbiology (MMI) 10
  - Molecular, Cellular, and Integrative Physiology (A Graduate Group) (MCP) 214, 218
  - Physics (PHY) 280, 371

**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>.

- Plant Biology (A Graduate Group) (PBI) 200A, 200B, 200C
- Psychology (PSC) 272
- Religious Studies (RST) 201
- Russian (RUS) 45
- Science and Society (SAS) 4, 130, 190X
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- Veterinary Medicine: Surgical and Radiological Sciences (VSR) 99, 199, 298, 299, 410, 431R
- Women and Gender Studies (WMS) 299D

#### **Version 1.4, release date: 10.3.2005**

- Modified Engineering: Electrical and Computer major program
- Added TechnoCultural Studies major program
- Added the following sections:
  - Film Studies (FMS)
  - Humanities (HUM)
  - Italian (ITA)
- Added the following course descriptions:
  - Agricultural and Resource Economics (ARE) 240C, 240D
  - Asian American Studies (ASA) 4, 113, 114, 116
  - Economics (ECN) 240C, 240D
  - Engineering: Mechanical and Aeronautical (MAE) 255
  - Environmental Toxicology (ETX) 260
  - Film Studies (FMS) 142
  - Geology (GEL) 91, 146, 261
  - German (GER) 101A, 101B, 113, 118E, 142
  - History (HIS) 115E
  - Humanities (HUM) 113
  - Immunology (IMM) 201
  - Italian (ITA) 9
  - Law (LAW) 411, 411B
  - Medicine: Pediatrics (PED) 472
  - Music (MUS) 127
  - Neurobiology: Physiology and Behavior (NPB) 221
  - Neuroscience (NSC) 221, 224A
  - Spanish (SPA) 3V, 141, 141S, 144, 160, 171, 171S
  - Veterinary Medicine (VMD) 400A
  - Veterinary Medicine: Medicine and Epidemiology (VME) 413, 464B
  - Veterinary Medicine: Pathology, Microbiology, and Immunology (PMI) 270
  - Veterinary Medicine: Surgical and Radiological Sciences (VSR) 292

#### **Version 1.5, release date: 10.24.2005**

- Modified Nutrition (A Graduate Group)
- Added the following sections:
  - Nutrition (NUT)
- Added the following course descriptions:
  - Law 411
  - Medicine: Otolaryngology (OTO) 450
  - Veterinary Medicine: Medicine and Epidemiology (VME) 413, 415, 416, 417, 419, 461B, 463B

#### **Version 1.6, release date: 12.01.2005**

- Modified Viticulture and Enology (VEN) 135
- Added the following sections:
  - Engineering: Mechanical (EME)
- Added the following course descriptions:
  - Communication (CMN) 215
  - Environmental and Resource Sciences (ERS) 8, 10, 10G, 105, 173
  - Engineering: Applied Science (EAD) 213A
  - Engineering: Computer Science (ECS) 235
  - Engineering: Electrical and Computer (EEC) 152
  - Engineering: Mechanical (EME) 107
  - Engineering: Mechanical and Aeronautical (MAE) 241
  - Entomology (ENT) 140S
  - Environmental Toxicology (ETX) 30
  - Hydrologic Sciences (HYD) 117, 212
  - Medicine: Epidemiology and Preventive Medicine (EPP) 402
  - Nutrition (NUT) 105
  - Science and Society (SAS) 8
  - Veterinary Medicine (VMD) 415B
  - Veterinary Medicine: Medicine and Epidemiology (VME) 461C, 465
  - Veterinary Medicine: Population Health and Reproduction (PHR) 489
  - Veterinary Medicine: Surgical and Radiological Sciences (VSR) 404B

#### **Version 1.7, release date: 01.03.2006**

- Added the following course descriptions:
  - Engineering: Civil and Environmental (ECI) 153
  - Engineering: Computer Science (ECS) 129
  - Engineering: Electrical and Computer (EEC) 73, 145A, 145B
  - Engineering: Mechanical (EME) 161
  - Hydrologic Sciences (HYD) 144
  - Law (LAW) 247, 257B, 294A
  - Medicine: Medical Science (MDS) 440A, 440B, 440C
  - Psychology (PSC) 165, 177
  - Veterinary Medicine (VMD) 400B, 402, 413
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  - Veterinary Medicine: Surgical and Radiological Sciences (VSR) 415

#### **Version 1.8, release date: 01.30.2006**

- Changed Leave of Absence: Planned Educational Leave Program (PELP)
- Added the following course descriptions:
  - African American and African Studies (AAS) 204
  - American Studies (AMS) 255
  - Anthropology (ANT) 203
  - Biophotonics (BPT) 290
  - Communication (CMN) 201, 210, 211, 213, 214, 220, 221, 222, 230, 231, 246, 250, 251, 252, 254, 280, 281, 282, 283
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  - Engineering: Biomedical (BIM) 161A, 190A, 209
  - Engineering: Chemical and Material Science (ECM) 90X, 094H, 190X, 194HA, 194HB, 194HC
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  - Engineering: Computer Science (ECS) 251
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  - Veterinary Medicine: Medicine and Epidemiology (VME) 494

#### **Version 1.9, final version release date: 03.3.2006**

- Added the following sections:
  - Applied Biological Systems Technology (ABT)
  - Statistics (STA)
- Added the following course descriptions:
  - Anthropology (ANT) 132, 172
  - Applied Biological Systems Technology (ABT) 145, 147, 170
  - Communication (CMN) 202
  - Design (DES) 142A, 142B
  - Engineering: Civil and Environmental (ECI) 123
  - Environmental Horticulture (ENH) 110, 112, 149
  - Environmental Toxicology (ETX) 220, 270
  - Evolution and Ecology (EVE) 231
  - Forensic Science (FOR) 220, 290
  - Geology (GEL) 16, 16G, 116, 116G
  - Hebrew (HEB) 100A, 100AN, 100B, 100BN, 100C, 100CN
  - International Agricultural Development (IAD) 396
  - Medicine: Family Practice (FAP) 482
  - Molecular, Cellular, and Integrative Physiology (A Graduate Group) (MCP) 210L
  - Plant Pathology (PLP) 205A
  - Political Science (POL) 210, 211, 214B
  - Soil Science (SSC) 205
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Quarter Offered: I=Fall, II=Winter, III=Spring, IV=Summer

General Education (GE) credit: ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Social-Cultural Diversity; Wrt=Writing Experience.

# Undergraduate Education

## Change in English Composition Examination Dates

The English Composition Examination will be offered on the following dates:

- Saturday, October 29, 2005
- Saturday, January 28, 2006
- Saturday, April 29, 2006

## Change in General Education Requirement

### Additional Conditions

#### 2. College and university composition requirements.

The following GE courses may not be used to satisfy university or college requirements in composition and GE writing experience simultaneously: Communication 1, Comparative Literature 1, 2, 3, 4, English 3, Native American Studies 5, University Writing Program 1, 18, 19, 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E.

Remember: You must satisfy the university Subject A requirement **before** you take any *writing experience* course for GE credit.

## Change in Minimum Progress Regulation (eff. fall 05)

See the Academic Information section.

## Change in Leave of Absence: Planned Educational Leave Program (PELP)

The Planned Educational Leave Program allows any registered student—undergraduate or graduate—to temporarily suspend academic work at UC Davis. Undergraduates may take one such leave during their academic career at UC Davis and that leave is limited to one quarter in duration. For graduate students the maximum leave is up to one year. Undergraduates apply for PELP at the Office of the University Registrar. Graduate students apply through their departments and professional students apply through their Dean's office.

Applications for PELP may be filed as late as the tenth day of instruction during the quarter for which the student is requesting a leave. However, approved applications submitted after the first day of instruction will entitle you to only a partial refund of fees paid, in accordance with the Schedule of Refunds. The Schedule of Refunds refers to calendar days beginning with the first day of instruction. The effective date for determining a refund of fees is the date the completed and approved PELP form is returned to the Office of the University Registrar. See the “Fees, Expenses and Financial Aid” chapter.

An application fee of \$55 (\$60; effective fall 2006) is charged to your account when you enroll in the PELP program. This fee is identical to that paid by a student who withdraws and is required to pay a readmission fee upon return. After filing your PELP form, you must file an exit form with Student Accounting.

While students may receive academic credit at other institutions and transfer this credit to UC Davis (subject to rules concerning transfer credit), participants are reminded that the intent of the program is to “suspend academic work.” Therefore, students are urged to carefully evaluate the desirability of taking academic work while away from the campus during PELP. Students enrolled in PELP are not eligible to enroll in Open Campus (concurrent) courses at the UC Davis campus, or to otherwise earn academic credit at UC Davis during the PELP leave.

Readmission is guaranteed assuming you resume academic work by enrolling in courses, satisfying any holds that may have been placed on your registration and paying your registration fees by the established deadlines for the quarter specified for return on your approved PELP application. Students who do not return by the specified quarter will be automatically withdrawn from the university.

You will not be eligible to receive normal university services during the planned leave. Certain limited services, however, such as placement and student employment services, counseling, and faculty advising are available. Students on PELP may purchase a health care card from the Student Health Service and may retain library privileges by purchasing a library card. International students should consult Services for International Students and Scholars to find out how the PELP will affect their status. Grants and other financial aids will be discontinued for the period of the leave, but effort will be made, where legally possible, to allow you to renegotiate loan payment schedules and to ensure the availability of financial aid upon your return.

## Health Insurance (SHIP) Coverage and Refund of SHIP Fees (eff. fall 05)

If you file a completed Notice of Cancellation/Withdrawal form or PELP form before the quarter start date, your Student Health Insurance Plan (SHIP) coverage will be canceled as of your status change, and your SHIP fees will be fully refunded. If you file your registration status change on or after the quarter start date, your SHIP coverage will extend to the end of the quarter, and SHIP fees will not be refunded. SHIP fee refunds will not be granted for retroactive status changes. Note that the quarter start date is not the same date as the first day of classes. Refer to the academic calendar for applicable dates.

Students who go on PELP and who qualify for a SHIP refund may elect to extend their SHIP coverage for up to one quarter. You must apply within five business days of your registration status change. For more information, contact Insurance Services at Cowell Student Health Center, (530) 752-6500.

Students who cancel or withdraw their registration and receive a refund of SHIP fees are not eligible to extend SHIP coverage.

## International Baccalaureate Examinations

UC Davis recognizes the International Baccalaureate (IB) examinations for college credit. Higher Level examinations presented with scores of 5, 6, or 7 receive degree credit and in specific instances are deemed comparable to various lower division courses. Students who present the IB Diploma will receive 30 quarter units of credit. The credit will apply toward the minimum 180 quarter units needed to receive a bachelor's degree.

Consult the table to learn how many units you will receive for an acceptable IB examination. The chart also specifies which UC Davis lower division course an IB examination is comparable to. Please note that the courses for which IB credit have been granted may

not be used as a substitute for courses required as part of the UC Davis General Education Requirement. See General Education in the "Undergraduate Education" chapter.

In general, you may not earn university credit for college courses that duplicate credit earned through IB. Similarly, students will not receive duplicate credit for comparable AP examinations if granted IB credit. Additionally, each college may have special restrictions on the use of IB examinations. Please check with your dean's office and department adviser to determine any restrictions in their use toward breadth requirements and lower division major course requirements.

### International Baccalaureate (IB) Higher Level Examination Credit

| Examination  | Score | UC Davis Course Equivalencies*                 | Continuing Course                  | Credit Toward Degree |
|--|-------|--|------------------------------------|----------------------|
| <b>ENGLISH</b>   |       |  |                                    |                      |
| English A1   | 5,6,7 | English 3                                      | Determined by adviser consultation | 8 units              |
| College of Letters and Science: Satisfies first course toward English Composition requirement.<br>College of Agricultural and Environmental Sciences: Satisfies first half of English Composition requirement  |       |  |                                    |                      |
| <b>LANGUAGES</b>   |       |  |                                    |                      |
| French A1  | 5,6,7 | French 21, 22, 23                              | Determined by adviser consultation | 8 units              |
| French A2  | 5,6,7 | French 21, 22                                  | Determined by adviser consultation | 8 units              |
| French B   | 5,6,7 | French 1, 2, 3                                 | Determined by adviser consultation | 8 units              |
| German A1  | 5,6,7 | German 1, 2                                    | Determined by adviser consultation | 8 units              |
| German A2  | 5,6,7 | German 1, 2                                    | Determined by adviser consultation | 8 units              |
| German B   | 5,6,7 | German 1, 2                                    | Determined by adviser consultation | 8 units              |
| Italian A1   | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| Latin A1   | 5,6,7 | Latin 1,2,3                                    | Determined by adviser consultation | 8 units              |
| Spanish A1   | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| Spanish A2   | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| College of Letters and Science: French and Latin examinations satisfy the Foreign Language requirement for A.B. degree.<br>College of Agricultural & Environmental Sciences: 8 units credit allowed toward Breadth requirement or Unrestricted electives for each language examination passed.                         |       |  |                                    |                      |
| <b>HUMANITIES</b>  |       |  |                                    |                      |
| History  |       |  |                                    |                      |
| Americas   | 5,6,7 | History 17A, 17B                               | Determined by adviser consultation | 8 units              |
| Europe   | 5,6,7 | History 4C                                     | Determined by adviser consultation | 8 units              |
| Islamic World  | 5,6,7 | History 6                                      | Determined by adviser consultation | 8 units              |
| Music  | 5,6,7 | Music 10                                       | Determined by adviser consultation | 8 units              |
| College of Letters and Science: Music examination partially satisfies Area (breadth) requirement for A.B. degree.<br>College of Agricultural & Environmental Sciences: 8 units of credit allowed toward Breadth requirement or Unrestricted electives for each examination passed.                                     |       |  |                                    |                      |
| <b>NATURAL SCIENCES</b>  |       |  |                                    |                      |
| Biology  | 5,6,7 | Biological Science 10                          | Determined by adviser consultation | 8 units              |
| Chemistry  | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| Mathematics  | 6,7   | Math 21a,21b (credit for one math series only) | Determined by adviser consultation | 8 units              |
|  | 5,6,7 | Math 17a,17b (credit for one math series only) | Determined by adviser consultation | 8 units              |
|  | 5,6,7 | Math 16a,16b (credit for one math series only) | Determined by adviser consultation | 8 units              |
| Physics  | 5,6,7 | Physics 1AB or 10                              | Determined by adviser consultation | 8 units              |
| College of Letters and Science/College of Agricultural and Environmental Sciences: 4 units of credit toward Natural Sciences.<br>Credit or Preparatory Course Work allowed for science majors for each Natural Sciences examination passed, except 8 units of credit allowed for Mathematics and Physics examinations. |       |  |                                    |                      |
| <b>SOCIAL SCIENCE</b>  |       |  |                                    |                      |
| Anthropology   | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| Economics  | 5,6,7 | Economics 1A and 1B                            | Determined by adviser consultation | 8 units              |
| Philosophy   | 5,6,7 |  | Determined by adviser consultation | 8 units              |
| Psychology   | 5,6,7 | Psychology 1                                   | Determined by adviser consultation | 8 units              |
| College of Agricultural and Environmental Sciences: 4 units of credit allowed toward Breadth requirement or Unrestricted electives for each Social Science examination passed, except 8 units allowed for courses with 8 units of credit.  |       |  |                                    |                      |
| <b>IB Diploma</b>  |       |  |                                    | <b>30 units</b>      |

Quarter Offered: I=Fall, II=Winter, III=Spring, IV=Summer

General Education (GE) credit: ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Social-Cultural Diversity; Wrt=Writing Experience.

## College Board Advanced Placement (AP) Examination Credit

### Changes to the College Board Advanced Placement (AP) Examination Credit table.

| College Board Advanced Placement (AP) Examination Credit  |       |   |                   |                      |
|---|-------|---|-------------------|----------------------|
| Examination   | Score | UC Davis Course Equivalencies*          | Continuing Course | Credit Toward Degree |
| <b>ENGLISH</b>  |       |   |                   |                      |
| A score of 3, 4, or 5 on the English AP examination satisfies the university Subject A requirement.   |       |   |                   |                      |
| English.....  | 5, 4  | English 3, University Writing Program 1 |                   | 8 units              |
| <i>College of Agricultural and Environmental Sciences:</i> 4 units—Satisfies first half of English composition requirement.   |       |   |                   |                      |
| <i>College of Engineering:</i> 8 units—Satisfies English 3, University Writing Program 1. <i>College of Letters and Science:</i> Satisfies first course toward English Composition requirement. |       |   |                   |                      |
| English.....  | 3     |   |                   | 8 units              |

Quarter Offered: I=Fall, II=Winter, III=Spring, IV=Summer

General Education (GE) credit: ArtHum=Arts and Humanities; SciEng=Science and Engineering; SocSci=Social Sciences; Div=Social-Cultural Diversity; Wrt=Writing Experience.

## Academic Information

### Changes to the Course Load.

The following changes reflect a change in Minimum Progress Regulations.

**Expected Progress.** Students are expected to graduate in 12 quarters (four years). To do so, students should plan to complete an average of 15 units per quarter (15 units per quarter for 12 quarters totals 180 units). Because occasions arise which prevent students from achieving expected progress towards the degree, the campus has established minimum progress requirements, to which students must adhere.

**Minimum Progress Requirements.** To meet minimum progress, a full-time regular undergraduate is required to maintain an average of at least 13 units passed over all quarters of enrollment. Undergraduate students falling below this requirement are not in good academic standing and may be disqualified from further enrollment at the University. Quarters for which a student was officially approved for part-time status are omitted from the minimum progress calculation.

### Changes to the Probation and Dismissal.

The following changes reflect a change in Minimum Progress (qualitative) Regulations.

The following provisions apply to all undergraduates. Graduate and professional students with scholarship deficiencies are subject to action at the discretion of their respective deans.

### Scholastic Deficiencies

A student will be placed on probation or subject to disqualification for failure to meet qualitative or quantitative standards of scholarship.

**Qualitative Standards.** The qualitative standards of scholarship require that a student maintain a C average (2.0) or better for all work undertaken in the university and for the work undertaken in any one quarter.

A student will be placed on **probation for qualitative reasons** if, at the end of any quarter, the student's grade point average (GPA):

- is less than 2.0, but not less than 1.5, for the quarter,
- or**
- is less than 2.0 for all courses taken within the University of California.

A student will be **subject to disqualification for qualitative reasons** if, at the end of any quarter,

- the student's grade point average is less than 1.5 for the quarter,
- or**
- the student's grade point average is less than 1.5 for all courses taken within the University of California,
- or**
- the student has attempted more than 16 units graded I (Incomplete),
- or**
- the student has spent two consecutive quarters on academic probation.

**Quantitative Standards.** The quantitative standards, referred to as minimum progress requirements, define scholarship in terms of the number of units that you must satisfactorily complete. It is expected that a student will earn the 180-unit minimum degree requirement within 12 quarters (four years). This means students are expected to complete, on average, 15 units per quarter.

Because occasions arise which prevent students from achieving expected progress towards the degree, the campus has established minimum progress requirements, to which students must adhere.

To meet minimum progress, a full-time regular undergraduate is required to maintain an average of at least 13 units passed over all quarters of enrollment. Minimum progress is calculated at the end of every Spring Quarter for the preceding three quarters (Fall, Winter, Spring) comprising the academic year. Quarters during that period for which a student was officially approved for part-time status are omitted from the minimum progress calculation.

The following courses may be counted toward unit minimum progress:

- Required non-credit courses, e.g., Mathematics B, will be evaluated according to the "Carnegie unit" rule and counted as units passed, although these courses shall not be applied toward the satisfaction of baccalaureate degree requirements
- Repeated courses passed to improve D or F grades up to a maximum of 16 units
- Courses passed in Summer Sessions at UC Davis or at another accredited school and transferred to UC Davis will be counted as units passed (applied to the next full-time quarter of enrollment immediately following the summer session)
- Courses passed by examination in accordance with policies established by the Divisional Committee on Courses (applied to quarter in which exam is taken)
- Courses that are IP (in progress) will be counted as units passed
- Courses graded I will be counted as units passed when replaced by a passing grade (applied to the quarter in which the I grade is received)

A student will be placed on **probation for quantitative reasons** if, at the end of any Spring Quarter, the minimum progress calculation for the preceding academic year shows that the student passed an average of less than 13 units but greater than or equal to 12 units per quarter.

A student will be subject to **disqualification for quantitative reasons** if, at the end of any Spring Quarter, the minimum progress calculation for the preceding academic year shows that the student passed an average of less than 12 units per quarter.

For every student who fails to meet minimum progress at the end of Spring Quarter, a "degree progress average" will be calculated at the close of the next full-time quarter of enrollment at UC Davis. The degree progress average is defined as the quotient of the number of units passed during all full-time quarters from the initial quarter of matriculation at UC Davis divided by the number of full-time quarters completed at UC Davis.

A student whose degree progress average is less than 13 units shall be "subject to disqualification for quantitative reasons." A student whose degree progress average is 13 or more units shall not be "subject to disqualification for quantitative reasons."

If a student fails to make minimum progress at the end of Spring Quarter, the degree progress average shall be calculated each subsequent full-time quarter of enrollment as long as the student is "subject to disqualification for quantitative reasons." A student who is "subject to disqualification for quantitative reasons" at the end of two consecutive full-time quarters of enrollment shall be disqualified from the university.



In the case of probation or subject to disqualification, for either qualitative or quantitative reasons, the official transcript will state “not in good standing.” Once a student has met qualitative and quantitative standards of scholarship, or has satisfied all requirements for graduation, the notation will be removed from the transcript.

**Dismissal**

Dismissal for either qualitative or quantitative reasons (defined above) is based on the decision of the dean of the college in which the student is enrolled. Such dismissal is from the University of California system and not simply the college or the Davis campus. Should a former Davis student later wish to be readmitted to the Davis campus, the authority to do so rests with the dean of the college from which the student was dismissed. If a student is dismissed from their college, they will automatically receive a full refund of registration fees paid for that term.

Students should go to the dean’s office of their college if they need academic advising about probation and dismissal.

## African American and African Studies

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

#### Upper Division Courses

##### 172. *Diaspora and New Black Identities* (4)

Lecture/discussion—3 hours; term paper. Critical analysis about what it means to be Black/ African American in the United States today. Topics include old and new diasporas, national origin, language, religion, class, education, politics, identity and cultural heritage. GE credit: Div, Wrt.—II. (II.) Ng'weno

(new course—eff. winter 06)

##### 175A. *Black Documentary: History and Theory* (4)

Lecture/discussion—4 hours. Prerequisite: Film Studies I, course 170; course 50 recommended. Black documentary history and documentary theory. Use of black documentary for political purposes. GE Credit: ArtHum, Div, Wri.—II, III. Acham

(new course—eff. spring 05)

##### 175B. *Black Documentary Practicum* (4)

Lecture—2 hours; laboratory—6 hours. Prerequisite: course 175A and consent of instructor. Creation of documentary projects, with students working in production crews. Offered in alternate years.—II, III. Acham

(new course—eff. spring 05)

##### 180. *Race and Ethnicity in Latin America* (4)

Lecture—4 hours. The social and political effects of racial and ethnic categorization in Latin America, including issues of economic production, citizenship, national belonging, and access to resources. Emphasis is on peoples of African, Indigenous, and Asian descent. GE credit: ArtHum or SocSci, Div.—II. (II.) Ng'weno

(new course—eff. winter 05)

##### 185. *Topics in African American Film* (4)

Lecture/discussion—4 hours. Prerequisite: course 170; course 50 recommended. Intensive study of special topics in African American film. May be repeated one time for credit. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—II. (II.) Acham

(new course—eff. spring 06)

#### Graduate Courses

##### 204. *Methodologies in African American and African Studies* (4)

Seminar—3 hours; term paper. The relationship between theory and methodology, with emphasis on identifying relevant methodological approaches and constructing theoretically informed research projects for studying the experience of people of African descent whether on the African continent or in the rest of the world.—I. Harrison, Ngweno

(new course—eff. fall 06)

## Agricultural and Environmental Sciences, College of

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### Changes to English Composition Requirement

The English Composition requirement can be met in one of two ways:

1. Either two courses emphasizing written expression or one course emphasizing written expression and one course emphasizing oral expression, with a grade of *C-* (or *P*) or better. The following UC Davis courses satisfy this requirement:

(a) one course must be selected from English 3, University Writing Program 1, 18, 19, 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, 104F; or Nematology 150 (courses with primary emphasis in writing skills);

(b) one course selected from the courses not selected above, or from Communication 1, Comparative Literature 1, 2, 3, 4, or Native American Studies 5 (courses emphasizing either writing or speaking skills);

### OR

2. by passing the English Composition Examination administered by the College of Letters and Science upon completion of 70 units of degree credit (the examination does not yield credit).

## Agricultural and Resource Economics

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

#### Lower Division Courses

##### 15. Economic Basis of the Agricultural Industry (4)

Lecture—4 hours. Agriculture and man; the agricultural industry in Australia and world economies; production and supply, marketing and demand; agricultural land, capital and labor markets; economic and social problems of agriculture in an urban and industrialized economy emphasizing Australia. Taught in Australia under the supervision of a UC Davis faculty member. Not open for credit to students who have completed course 1. Not offered every year.—Alston

(new course—eff. fall 04)

#### Upper Division Courses

##### 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 120. Not offered every year.—Alston

(new course—eff. fall 04)

#### Graduate Courses

##### 204. Microeconomic Analysis (5)

(cancelled course—eff. fall 05)

##### 239. Econometric Foundations (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: one course in undergraduate-level econometrics. The course will prepare students for econometric theory and empirical work by examining the statistical foundation of econometrics. Special attention is paid to problems specific to non-experimental data common to social sciences. Topics from matrix algebra are also covered. (Same course as Economics 239.)—I. (I.) Green

(new course—eff. fall 04)

##### 240C. Time Series Econometrics (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Probability theory; estimation, inference and forecasting of time series models; trends and non-standard asymptotic theory; vector time series methods and cointegration; time series models for higher order moments and transition data; state-space modeling; the Kalman filter. (Same course as Economics 240C.)—II. (II.) Jorda

(change in existing course—eff. winter 05)

##### 240D. Cross Section Econometrics (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Estimation and inference for nonlinear regression models for cross-section data; models for discrete data and for limited dependent variables; models for panel data; additional topics such as bootstrap and semiparametric regression. (Same course as Economics 240D.)—I. (I.) Cameron

(change in existing course—eff. fall 04)

## Agricultural Management and Rangeland Resources

### Changes in B.S. Major Requirements for Agricultural Management and Rangeland Resources Major

|  | UNITS        |
|--|--------------|
| <b>Written/Oral Expression</b> .....   | <b>8-12</b>  |
| See college English requirement .....  | 8            |
| One of University Writing Program 102A, 102B, 102C, 102D, 102E, 102F, 102G, or 104A, 104C, 104D, 104E, or 104F .....   | 4            |
| <b>Perspectives on Agriculture and the Environment</b> .....   | <b>13</b>    |
| Agricultural Management and Rangeland Resources 1 .....  | 3            |
| Agricultural Management and Rangeland Resources 2 .....  | 4            |
| Applied Biological Systems Technology 49 .....   | 2            |
| Animal Science 1 or 2 .....  | 4            |
| <b>Preparatory Subject Matter</b> .....  | <b>41-43</b> |
| Biological Sciences 1A-1B .....  | 10           |
| Chemistry 2A-2B .....  | 10           |
| Physics 1A-1B or Physics 7A-7B .....   | 6-8          |
| Mathematics 16A .....  | 3            |
| Agricultural Management and Rangeland Resources 21 .....   | 3            |
| Agricultural Management and Rangeland Resources 120 or Statistics 13 or 102 .....  | 4            |
| Economics 1A .....   | 5            |
| <b>Breadth/General Education</b> .....   | <b>24</b>    |
| See General Education requirement.   |              |
| <b>Depth Subject Matter</b> .....  | <b>17-18</b> |
| Agricultural Management and Rangeland Resources 150 or Environmental Science and Policy 100 or Plant Biology 117 or 142 .....  | 4            |
| Agricultural and Resource Economics 112 or 113 or 140 .....  | 4-5          |
| Agricultural Management and Rangeland Resources 101 .....  | 3            |
| Agricultural Management and Rangeland Resources 92, 99, or 137, or Applied Biological Systems Technology 145; International Agricultural Development 195A, 195B .....  | 3            |
| Agricultural Management and Rangeland Resources 192, 199 .....   | 3            |
| <b>Area of Specialization (choose one):</b>  |              |
| <b>Sustainable Production Systems</b> .....  | <b>53-57</b> |
| Includes food and agricultural production, agroecology, crop improvement, propagation, and pest management. Students may choose between a broad education in sustainable agriculture or focus on one or two areas of agriculture (e.g., agricultural management, agronomy, crop improvement, environmental horticulture, pest management, pomology, vegetable crops, viticulture).<br>Crop biology and ecology depth requirement must be met with Plant Biology 142.<br>Plant Biology 152 or Biological Sciences 101 ..... | 4            |
| Chemistry 8A, 8B .....   | 6            |
| Agricultural Management and Rangeland Resources 105 .....  | 3            |
| Soil Science 100 .....   | 4            |
| Select courses from Agricultural Management and Rangeland Resources 107, 110A, 110B, 110C, 112, 134, 135, 150, 160, 170A, 170B; Environmental Horticulture 120, 125, 130, 133; Plant Biology 173, 174; Viticulture and Enology 101A, 101B, 101C, 111, 115, 116 .....   | 12-16        |

Restricted elective courses chosen from the following groups with approval of the academic adviser (minimum 24 units)

#### *Plant improvement and propagation*

(Agricultural Management and Rangeland Resources 118; Biotechnology 171; Plant Biology 143, 152, 153, 154, 160, 171)

#### *Plant physiology or plant nutrition*

(Environmental Horticulture 102; Plant Biology 111, 146, 157, 158, 172, 175; Viticulture and Enology 110)

#### *Atmospheric, soil or water science*

(Atmospheric Science 133; Environmental and Resource Sciences 100; Hydrologic Science 110, 124; Soil Science 107, 109, 111)

#### *Pest ecology and management*

(Plant Biology 176, 177; Entomology 110, 135; Nematology 100; Plant Pathology 120; Viticulture and Enology 118)

#### *Agricultural economics*

(Agricultural and Resource Economics 100A, 120, 130, 147; International Agricultural Development 110)

#### *Agricultural management*

(Agricultural and Resource Economics 100B, 140, 145, 150, 157; Applied Biological Systems Technology 142, 147; Agricultural Management and Rangeland Resources 121)

#### *Animal production*

(Animal Science 41, 41L, 104)

#### *Policy, social science and ethics*

(Agricultural and Resource Economics 147, 176; Agricultural Management and Rangeland Resources 121; Economics 123; Environmental Science and Policy 161, 175; International Agricultural Development 103, 104; Plant Pathology 140; Political Science 107)

Unrestricted Electives .....

### **Range and Natural Resources**..... **47-53**

This specialization brings together courses that provide a unified understanding of the interaction between livestock production and environmental quality in rangelands.

Agricultural Management and Rangeland Resources 112, 121, 130, 131, 134, 135, Plant Biology 102 or 145 .....

Soil Science 100 .....

Environmental and Resource Sciences 100 or 121 or

Hydrologic Science 141 or 143 .....

Wildlife, Fish and Conservation Biology 110, 111, 120, 151 .....

Animal Science 41, Nutrition 115 .....

Agricultural Management and Rangeland Resources 180, Applied Biological Systems Technology 180, 182, or

Hydrologic Science 182, 186 .....

Environmental Science and Policy 172 .....

Unrestricted Electives .....

Unrestricted Electives .....

Unrestricted Electives .....

### **Total Units for the Major**..... **180**

**Major Adviser:** T. Foin.

**Advising Center** located in 1220A Plant and Environmental Sciences (530) 752-1715.

# American Studies

## Changes in B.S. Major Requirements for American Studies Major

|  | UNITS     |
|--|-----------|
| <b>Preparatory Subject Matter</b> .....  | <b>24</b> |
| American Studies 10 .....  | 4         |
| One additional lower division American Studies course .....  | 4         |
| One course from African American and African Studies 10, Asian American Studies 1, Chicana/o Studies 10, Native American Studies 1, or an equivalent course in racial and ethnic diversity .....   | 4         |
| One course from Anthropology 2, Sociology 2, Women's Studies 50, or an equivalent course in social science approaches to culture .....   | 4         |
| One course from History 17A, 17B, 72A, 72B .....   | 4         |
| One course from English 30A, 30B, Film Studies 1, or an equivalent course introducing critical approaches to literary and visual texts in the humanities .....   | 4         |
| <b>Depth Subject Matter</b> .....  | <b>40</b> |
| American Studies 100 and 160.....  | 8         |
| American Studies Electives: Three additional upper-division American Studies courses .....   | 12        |
| Emphasis .....   | 20        |
| In consultation with the American Studies Undergraduate Adviser, the student designs a program of 20 units (typically five courses) of upper division course work around a unifying theme, period, or subject matter in American cultures. The courses should come from two or more departments or programs and can include up to 8 units of American Studies courses. Only 4 units of course 192 (internship) can be included in the emphasis. The student may choose the senior thesis option (190A-190B) for 8 units of the emphasis and take the remaining 12 units outside the program. |           |
| <b>Total Units for the Major</b> .....   | <b>64</b> |
| Recommended  |           |
| Completion of the college requirement in English composition before enrollment in American Studies 190A.   |           |

## Changes in Minor Requirements for American Studies Minor

|  | UNITS     |
|--|-----------|
| <b>American Studies</b> .....  | <b>20</b> |
| American Studies, upper division courses .....                       | 20        |
| No more than 8 units of course 192 may be counted toward this total. |           |

## New and changed courses in American Studies (AMS)

### Lower Division Courses

#### 25. United States as a Business Culture (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: completed Subject A requirement. Business as a cultural system and its relation to religion, politics, arts, science, technology, and material culture; business themes of success, creativity, invention, and competition in American autobiographies, fiction, advice literature, film, and television; cultures of the workplace; multinational business. GE credit: ArtHum, SocSci, Div, Wrt.—I. (I.) de la Pena, Mechling  
(new course—eff. fall 07)

#### 55. Food in American Culture (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: completed Subject A requirement. Food as a cultural system in the United States; food in the performance of individual and group identity, including gender and ethnicity; food in literature, art, popular culture (film, television, advertising), and folk culture; the food industry and business. GE credit: ArtHum, SocSci, Div, Wrt.—II. (II.) de la Pena, Mechling  
(new course—eff. fall 07)

### Graduate Courses

#### 255. Food in American Culture (4)

Seminar—3 hours; term paper. Prerequisite: 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. Not offered every year. de la Pena, Mechling  
(new course—eff. fall 07)

# Animal Biology

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## Changes in B.S. Major Requirements for Animal Biology Major

|   | UNITS        |
|---|--------------|
| <b>English Composition Requirement</b> .....  | <b>8</b>     |
| See College requirement   |              |
| <b>Preparatory Subject Matter</b> .....   | <b>69-74</b> |
| Biological Sciences 1A-1B-1C.....   | 15           |
| Chemistry 2A-2B-2C, 8A-8B or 118A-118B<br>21-23   |              |
| Mathematics 16A-16B-16C or 17A-17B-17C or 21A-21B-21C<br>9-12   |              |
| Physics 7A-7B-7C.....   | 12           |
| Statistics 13 or 100 or 102 or Agricultural Management<br>and Rangeland Resources 120 .....   | 4            |
| Animal Biology 50A, 50B, 50C.....   | 8            |
| <b>Breadth/General Education</b> .....  | <b>24</b>    |
| <b>Depth Subject Matter</b> .....   | <b>36-39</b> |
| Biological Sciences 101 .....   | 4            |
| Animal Biology 102 and 103 or Biological Sciences 102<br>and 103 .....  | 6-10         |
| One from Neurobiology, Physiology, and Behavior 101,<br>117; Entomology 102; Wildlife, Fish, and Conservation<br>Biology 121 .....  | 3-5          |
| One from Anatomy, Physiology and Cell Biology 100;<br>Entomology 101; Neurobiology, Physiology, and<br>Behavior 123 .....   | 3-4          |
| Evolution and Ecology 100 .....   | 4            |
| One from Environmental Science and Policy 100, 121;<br>Evolution and Ecology 101, 102 .....   | 4            |
| Animal Biology 187 .....  | 2            |
| Animal Biology 189 and 189D .....   | 4-6          |
| <b>Restricted Electives</b> .....   | <b>25</b>    |
| Focused specialty as outlined in the student's major proposal (from course 187) with approval of an adviser. 18 of these units must be selected from courses offered by divisional faculty in any of the following departments: Animal Science; Entomology; Nematology; Wildlife, Fish, and Conservation Biology. |              |
| <b>Unrestricted Electives</b> .....   | <b>10-18</b> |
| <b>Total Units for the Degree</b> .....   | <b>180</b>   |

## Animal Biology (A Graduate Group)

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### New and changed courses in Animal Biology (A Graduate Group) (ABG)

#### Graduate Courses

##### 200A. Integrated Animal Biology I (3)

Lecture/discussion—3 hours. Prerequisite: graduate standing; Biological Sciences 101 or the equivalent or the consent of the instructor. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students.—I. (I.) Delany

(new course—eff. fall 05)

##### 200B. Integrated Animal Biology II (3)

Lecture/discussion—3 hours. Prerequisite: course 200A. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students.—II. (II.) Delany

(new course—eff. winter 06)

##### 290. Seminar in Animal Biology (1)

Seminar—1 hour. Prerequisite: graduate standing. Seminar on advanced topics in animal biology. Presentations by members of the Animal Biology Graduate Group and guest speakers. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

(new course—eff. spring 05)

##### 290C. Research Conference (1)

Discussion—1 hour. Prerequisite: graduate standing and consent of instructor. Student presentations of research in Animal Biology and discussions among participating students and Animal Biology faculty. May be repeated for credit. (S/U grading only.)—I, II, III, IV, V, VII. (I, II, III, IV, V, VII.)

(new course—eff. spring 05)

##### 299. Research (1-11)

Laboratory/discussion—3-33 hours. Prerequisite: graduate standing and consent of instructor. Research with a faculty member in Animal Biology Graduate Group. May be repeated for credit. (S/U grading only.)—I, II, III, IV, V, VII. (I, II, III, IV, V, VII.)

(new course—eff. winter 05)

#### Professional Courses

##### 300. Methods in Teaching Animal Biology (2)

Lecture/discussion—2 hours. Prerequisite: graduate standing and consent of instructor. Practical experience in the methods and problems of teaching animal biology. Includes analysis of laboratory exercises, discussion of teaching techniques, grading scientific essays, preparing for and conducting discussion or laboratory sections, formulating quiz and exam questions under supervision of instructor. May be repeated up to three times for credit. (S/U grading only.)—I, II. (I, II.) Famula, Oberbauer

(new course—eff. spring 05)

##### 396. Teaching Assistant Training Practicum (1-4)

Variable—3-12 hours. Prerequisite: graduate standing and consent of instructor. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

(new course—eff. spring 05)

##### 401. Ethics and Professionalism in Animal Biology (2)

Discussion—2 hours. Prerequisite: graduate standing; first pass Animal Biology graduate group students. Case studies and discussion of ethical and professional issues for animal biologists, including the use of animals in research and teaching, patenting and intellectual property, consulting and conflict of interest, scientific integrity, dealing with the media, and mentoring relationships.—III. (III.) Mench

(new course—eff. spring 05)



# Animal Science

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## New and changed courses in Animal Science (ANS)

### Upper Division Courses

#### 123. Animal Growth and Development (4)

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: Animal Biology 103 or Biological Sciences 103. Growth and development of animals from conception to maturity, viewed from practical and biological perspectives; includes genetic, metabolic, nutritional control of cell and organism function. GE credit: SciEng.—III. (III.) Sainz  
(change in existing course—eff. spring 05)

#### 138. Advanced Animal Biochemical Techniques (3)

Laboratory—6 hours; lecture—1 hour. Prerequisite: Biological Sciences 102 and 103 or Animal Biology 102 and 103. Theory and advanced practices of biochemistry techniques used in animal research. Topics include laboratory and radiation safety, experimental design, diet preparation, dose-response growth trial, record keeping, statistical analysis, biological sampling and instrumentation in radio-immuno-assay, enzyme-linked-immuno-sorbent-assay, spectroscopy, chromatography, electrophoresis, and reporting.—III. (III.) Hung  
(new course—eff. spring 05)

### Graduate Division Courses

#### 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.)—I, II, III. (I, II, III.)  
(new course—eff. fall 04)

# Animal Science and Management

## Changes in B.S. Major Requirements for Animal Science and Management Major

|   |              |
|---|--------------|
|   | UNITS        |
| <b>Written and Oral Expression</b> .....  | <b>8-16</b>  |
| <b>See College requirement</b> .....  | <b>0-8</b>   |
| Select two courses (if not selected for English college requirement) from Communication 130, 134, 135, 136, 140; Nematology 150; University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, 104F.....  | 8            |
| <b>Preparatory Subject Matter</b> .....   | <b>71-74</b> |
| Animal Science 1 and 2 .....  | 8            |
| Biological Sciences 1A, 1B, and one of 1C, Agricultural Management and Rangeland Resources 2, 110A, 112, or Environmental Horticulture 6.....   | 13-15        |
| Chemistry 2A, 2B, 8A, 8B .....  | 16           |
| Agricultural Management and Rangeland Resources 21 or Computer Science Engineering 15 .....   | 3-4          |
| Economics 1A, 1B; Management 11A, 11B.....  | 18           |
| Mathematics 16A, 16B, and 16C or the more advanced mathematics courses.....   | 9            |
| Agricultural Management and Rangeland Resources 120, Statistics 100 or 103, or other courses in quantitative skills with prior approval of the Master Adviser.....  | 4            |
| <b>Breadth/General Education Subject Matter</b> .....   | <b>12-24</b> |
| <b>Depth Subject Matter</b> .....   | <b>27-30</b> |
| Biological Sciences 101 .....   | 4            |
| Nutrition 115 .....   | 4            |
| Neurobiology, Physiology, and Behavior 101 .....  | 5            |
| Business Management .....   | 14-17        |
| Agricultural and Resource Economics 100A;<br>One course from Agricultural and Resource Economics 113, 130, 136, 138;<br>One course from Agricultural and Resource Economics 120, 132, 140, 145, 157;<br>Plus one course from Animal Science 128 or Agricultural and Resource Economics 155. |              |
| <b>Area of Specializations</b> .....  | <b>14-16</b> |
| Choose one area of specialization below.  |              |
| <b>Aquatic Animals</b> .....  | <b>16</b>    |
| Animal Science 18, 118 or 119, 131, and 148.  |              |
| <b>Companion Animals</b> .....  | <b>16</b>    |
| Animal Science 42, 140, 142, and 148.   |              |
| <b>Dairy</b> .....  | <b>15</b>    |
| Animal Science 41, 41L, 146, 147, and 148.  |              |
| <b>Equine</b> .....   | <b>15</b>    |
| Animal Science 15, 115, 141, and 148  |              |
| <b>Livestock</b> .....  | <b>16</b>    |
| Animal Science 41, 41L, 143 or 144, 145, and 148.   |              |
| <b>Poultry</b> .....  | <b>15</b>    |
| Avian Sciences 11, Animal Science 143, 145, and 148   |              |

## Individualized..... 14-16

Students may, with prior approval of their advisor and the Master Adviser, design their own individualized specialization within the major. The specialization will consist of 4 to 6 courses with one of the courses being Animal Science 148. The other courses will include an introduction, care and management, and processing and/or marketing aspects of the animal of interest.

## Restricted Electives..... 8-10

At least two additional courses (minimum 8 units; duplicate from Depth courses not counted) selected with approval of adviser from: Agricultural and Resource Economics 18, 112, 113, 118, 120, 130, 132, 136, 138, 140, 142, 143, 144, 145, 150, 155, 157, 171A, 171B, 176; Animal Science 103, 104, 105, 106, 115, 118, 119, 120, 120L, 123, 124, 125, 126, 127, 128, 129, 131, 136, 137, 140, 141, 142, 143, 144, 145, 146, 147, 149, 170, 192, 194, 194H; Avian Sciences 100, 103, 115, 121, 123, 149, 150; Animal Genetics 101, 105, 107, 111; Nutrition 122, 123, 123L, 124; Animal Biology 102 (strongly recommended), 103; Computer Science Engineering 124; Management 100; Neurobiology, Physiology, and Behavior 117, 121, 121L, 130; Wildlife, Fish, and Conservation Biology 120, 120L, 130.

## Unrestricted Electives ..... 10-40

## Total Units for the Degree..... 180

# Anthropology

## New and changed courses in Anthropology (ANT)

### Lower Division Courses

#### 13. Scientific Method in Physical Anthropology (4)

Lecture—2 hours; laboratory/discussion—1 hour; fieldwork—1 hour. Skills for scientific thinking; designing, implementing, analyzing, interpreting, presenting, and criticizing research. Collection and analysis of original data. Basic statistical methods. GE credit: SocSci, Wrt.—I. (I.) McElreath, Harcourt

(new course—eff. fall 04)

#### 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 sedentism. Offered in alternate years. GE credit: SocSci, Div, Wrt.—(I.) Eerkens

(new course—eff. spring 05)

#### 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.—I. (I.) Donham

(new course—eff. fall 05)

#### 50. Evolution and Human Nature (4)

Lecture—3 hours; discussion—1 hour. Evolutionary analyses of human nature, beginning with Lamarck, Darwin, Spencer and contemporaries, and extending through social Darwinism controversies to contemporary evolutionary anthropology research on human diversity in economic, mating, life-history, and social behavior. GE credit: SocSci, Div, Wrt.—II. (II.) Winterhalder

(new course—eff. fall 04)

### Upper Division Courses

#### 101. Ecology, Nature, and Society (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or 2 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 conservation. (Same course as Environmental Science and Policy 101.) GE credit: SocSci, Div, Wrt.—II. (II.) Borgerhoff, Mulder

(change in existing course—eff. winter 05)

#### 105. Evolution of Societies and Cultures (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or 2 or Environmental Science and Policy 30 or Evolution and Ecology 100 or Biological Sciences 101. Interdisciplinary study of social and cultural evolution in humans. Culture as a system of inheritance, psychology of cultural learning, culture as an adaptive system, evolution of maladaptations, evolution of technology and institutions, evolutionary transitions in human history, coevolution of genetic and cultural variation. Only two units of credit to students who have completed Environmental Science and Policy 101 or course 101 prior to fall 2004. (Same course as Environmental Science and Policy 105.) GE credit: SocSci, Wrt.—III. (III.) McElreath, Richerson

(new course—eff. fall 04)

#### 110. Language and Sociocultural Anthropology (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 2. The role of language analysis and linguistic theory in the development of sociocultural anthropology. Language, culture, and thought; the linguistic accomplishment of social action; language ideology; language and social power. Language as cultural mediator of politicoeconomic process. GE credit: SocSci, Div, Wrt.—II. Shibamoto Smith

(change in existing course—eff. winter 05)

#### 112. Comparative Linguistics (4)

(cancelled course—eff. spring 05)

#### 113. Indigenous Languages of North America (4)

(cancelled course—eff. spring 05)

#### 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 approach of political ecology. Case studies of environmental degradation (e.g., desertification, logging, mineral extraction, petroleum, water) from various cultural and geographic regions. GE credit: SocSci, Div.—II. (II.) Boyd

(new course—eff. fall 05)

#### 132. Ethnohistory (4)

(cancelled course—eff. fall 07)

#### 134. Buddhism in Global Culture (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: one lower division course in Anthropology, Sociology, History, or Religious Studies. Food as a cultural system in the United States; food in the performance of individual and group identity, including gender and ethnicity; food in literature, art, popular culture (film, television, advertising), and folk culture; the food industry and business. Limited enrollment. GE credit: SocSci, Div, Wrt.—II. (II.) Klima

(new course—eff. fall 05)

#### 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, modernity, body-cultures, identity, gender, and diasporas. GE credit: ArtHum or SocSci, Div, Wrt.—Srinivas

(new course—eff. winter 05)

#### 172. Peopling of the New World (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. Cultural adaptation and development of early inhabitants of North and South America. Offered in alternate years. GE credit: SocSci, Div, Wrt.—(I.) Darwent

(change in existing course—eff. fall 07)

#### 175. Andean Prehistory: Archaeology of the Incas and their 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.—I. (I.) Eerkens

(new course—eff. fall 06)

**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 anthropological questions that can be addressed with different methods. Preparation and analysis of archaeological materials. Offered in alternate years.—I. Eerkens  
(new course—eff. spring 05)

**Graduate Courses****201. Critical Readings in Ethnography (4)**

Seminar—3 hours; term paper. 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.—I. (I.) Zhang  
(change in existing course—eff. spring 05)

**203. History and Theory of Archaeology (4)**

Seminar—3 hours; term paper. History of archaeology and archaeological theory and analysis of archaeological research methodology. Generally restricted to graduate students; outstanding undergraduates with extensive training in archaeology with consent of instructor.—I. Bettinger  
(change in existing course—eff. fall 05)

**227. Behavioral Ecology and Anthropology (4)**

(cancelled course—eff. spring 05)

**291. Advanced Topics in Human Behavioral Ecology (4)**

Discussion—3 hours; term paper. Prerequisite: course 261, 262, or 263, or comparable experience in anthropology or related disciplines and consent of instructor. Topically focused, critical discussion of current and emerging research in the field of human behavioral ecology, giving special attention to theory, concepts, models, and methods for the evolutionary analysis of ethnographic and archaeological evidence. May be repeated one time for credit if topic differs.—III. Borgerhoff Mulder, McElreath, Winterhalder  
(new course—eff. fall 04)

# Applied Biological Systems Technology

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## **New and changed courses in Applied Biological Systems Technology (ABT)**

### **Upper Division Courses**

#### **145. Field Equipment Technology (2)**

(cancelled course—eff. spring 06)

#### **147. Field Equipment Management (2)**

(cancelled course—eff. spring 06)

#### **170. Design in Biological Systems Technology (3)**

(cancelled course—eff. spring 06)

# Art History

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## New and changed courses in Art History (AHI)

### Lower Division Courses

#### **1D. Arts of Asia (4)**

Lecture—3 hours; discussion—1 hour. Introduction to major forms and trends in the arts 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.—II. (II.) Burnett

(change in existing course—eff. spring 05)

#### **1DV. Arts of Asia (Virtual) (4)**

Online lecture—3 hours; discussion—1 hour; lecture/discussion—1.5 hours. Introduction to major forms and trends in the arts 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 1D. GE credit: ArtHum, Div.—I, II. Burnett

(change in existing course—eff. spring 05)

### Graduate Courses

#### **292. Art History Internship (2-12)**

Internship—6-36 hours. Supervised internship at professional art or cultural institution including museums, galleries, archives, government offices, visual resources libraries, etc. May be repeated one time for credit. Not offered every year. (S/U grading only.)

(new course—eff. fall 04)

# Art Studio

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## New and changed courses in Art Studio (ART)

### Upper Division Courses

#### 138. The Artist's Book (4)

Studio—6 hours. Prerequisite: courses 2, 5, and 7; course 110, 125, 126, 127, or 128. Creation of visual art work in the form of a unique artist's book structure, in an edition of three. Examples of historical and contemporary artist's books. A variety of media will be explored, including photography, printmaking, sculpture, and painting/drawing. May be repeated two times for credit when topic differs.

(new course—eff. fall 05)

#### 151. Intermediate Sculpture (4)

Studio—6 hours. Prerequisite: course 5. Builds on the basic skills and concepts covered in Art 5. Individualized explorations through multiple projects in a variety of media and techniques. Contemporary art theory and its relationship to the studio practice. May be repeated two times for credit when topic differs.—I, II, III.

(I, II, III.) Bills, Hill, Puls

(new course—eff. fall 05)

#### 152. Sculpture: Special Topics (4)

Studio—6 hours. Prerequisite: courses 5 and 151. Special topics related to sculpture and contemporary art practice. Multiple projects in a variety of media. May be repeated two times for credit when topic differs.—I, II, III. (I, II, III.) Bills, Hill, Puls

(new course—eff. fall 05)

#### 153. Metals (4)

Studio—6 hours. Prerequisite: courses 5 and 152. Technical and theoretical aspects of the use of metals in contemporary art practice. Students will produce primary works which demonstrate the evolution of a concept and process. May be repeated three times for credit when topic differs. Restricted enrollment.—I, II, III. (I, II, III.) Bills

(new course—eff. fall 05)

#### 154. Site-Specific Public Art (4)

Studio—6 hours. Prerequisite: courses 5 and 151. Place- and site- specificity in contemporary sculpture. Students will work collaboratively and individually to conceive of and fabricate sculpture in a public space. May be repeated two times for credit when topic differs. Hill, Bills

(new course—eff. fall 05)

## Asian American Studies

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### New and changed courses in Asian American Studies (ASA)

#### Lower Division Courses

##### 4. Asian American Literary & Visual Representations (4)

Lecture—3 hours; discussion—1 hour. This interdisciplinary course examines the multiple ways in which race, class, sexuality and gender, as well as the recent turn to transnationalism and postcolonial theory, have changed the ways we read Asian American literature and see art, theater and film. GE credit: ArtHum, Div, Wrt.—I. (I.) Min

(change in existing course—eff. fall 06)

#### Upper Division Courses

##### 113. Asian American Sexuality (4)

Lecture/discussion—4 hours. Prerequisite: course 1, 2, or 3. Restrictive US immigration laws, labor exploitation, race-based exclusionary laws, removal and internment, anti-miscegenation laws, and other examples of social control are surveyed to assess their role in shaping the sexuality of the different Asian American groups.—II. (II.) Hamamoto

(change in existing course—eff. winter 06)

##### 114. Asian Diasporas (4)

Lecture—4 hours. Prerequisite: course 1 or 2; upper division status or consent of instructor. Asian diasporic communities and the experiences of its members in the United States and internationally. Community building, cyberspace, gender issues, labor, transnational practices, effects of globalization, political organizing, homeland politics, humanitarian projects, citizenship and nationalism. Offered in alternate years. GE credit: SocSci, Div.—III. Valverde

(change in existing course—eff. spring 06)

##### 116. Asian American Youth (4)

Lecture—3 hours; term paper. Prerequisite: course 1, 2, or 3. Social experiences of diverse groups of Asian American youth. Ways in which youth themselves actively create cultural expressions and political interventions. GE credit: Div.—I. (I.) Maira

(change in existing course—eff. fall 06)

##### 171. Health Issues Confronting Asian Americans and Pacific Islanders (4)

Lecture/discussion—4 hours. Health issues confronting Asian Americans and Pacific Islanders. (Same course as Epidemiology and Preventive Medicine 171.)—II. (II.) Chen

(new course—eff. winter 05)

##### 189A-I. Topics in Asian American Studies (4)

Lecture—4 hours. Prerequisite: course 1, 2, or 3 and upper division standing, or consent of instructor. Intensive treatment of a topic in Asian American Studies. (A) History; (B) Culture; (C) Physical and Mental Health; (D) Policy and Community; (E) Comparative Racial Studies; (F) Asian Studies and Asian American Studies; (G) Race, Class, Gender, and Sexuality; (H) Society and Institutions; (I) Politics and Social Movements. May be repeated for credit when topic differs. Not offered every year.

(new courses—eff. winter 05)



# Astronomy

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## New and changed courses in Astronomy (AST)

### Lower Division Courses

#### 105. Introduction to the Solar System (3)

Lecture—3 hours. Non-mathematical introduction to the astrophysics of the solar system using concepts of modern physics. Not open for credit to students who have taken course 2 or any Physics course, except 10, 137, or 160. GE credit: SciEng.—II, III. (II, III.)

(change in existing course—eff. spring 05)

# Atmospheric Science

## Changes in B.S. Major Requirements for Atmospheric Science Major

|   | UNITS        |
|---|--------------|
| <b>English Composition Requirement</b> .....  | <b>3-11</b>  |
| See College requirement.....  | 0-8          |
| Communication 1, Dramatic Art 10, or University Writing Program 19, 104E .....  | 3            |
| <b>Preparatory Subject Matter</b> .....   | <b>59</b>    |
| Biological Sciences 1C.....   | 4            |
| Chemistry 2A, 2B .....  | 10           |
| Computer Science Engineering 30 or course selected with adviser's approval.....   | 4            |
| Mathematics 21A, 21B, 21C, 21D, 22A, 22B .....  | 22           |
| Atmospheric Science 60 .....  | 4            |
| Physics 9A, 9B, 9C .....  | 12           |
| Statistics 13 .....   | 3            |
| <b>Breadth/General Education</b> .....  | <b>28</b>    |
| Satisfaction of General Education requirement; additional units in social sciences and humanities to total 28 units.  |              |
| <b>Depth Subject Matter</b> .....   | <b>36</b>    |
| Atmospheric Science 110, 111, 111L, 120, 121A, 121B, 124, 128 .....   | 28           |
| Upper division Atmospheric Science courses selected with adviser's approval, not including courses 192 and 199 .....  | 4            |
| Engineering 6, Atmospheric Science 150, Civil and Environmental Engineering 119A or course selected with adviser's approval .....   | 4            |
| <b>Restricted Electives</b> .....   | <b>15</b>    |
| Coordinated group of courses (minor area) to be chosen with adviser's approval from mathematics, computer science, environmental studies, resource management, or a physical or biological science (at least 10 upper division units) ..... |              |
| 15  |              |
| <b>Unrestricted Electives</b> .....   | <b>31-39</b> |
| <b>Total Units for the Degree</b> .....   | <b>180</b>   |

## Changes in Minor Requirements for Atmospheric Science Minor

**Minor Program.** The minor in Atmospheric Science provides a broad treatment of weather and climate, with the option to focus on such topics as climate change, meteorological instrumentation, and satellite remote sensing. Students undertaking the minor should have completed minimum preparatory course work in calculus and physics (Mathematics 16A-16B, Physics 5A or 7A). Some upper division courses in Atmospheric Science have the Mathematics 21 and 22 series and the Physics 9 series as prerequisites.

|  | UNITS        |
|--|--------------|
| <b>Atmospheric Science</b> .....   | <b>20-24</b> |
| Atmospheric Science 60, 110 .....  | 8            |
| Four courses selected with the approval of the minor program adviser from upper division Atmospheric Science courses (excluding 192 or 199) or Environmental and Resource Sciences 131 ..... | 12-16        |

## New and changed courses in Atmospheric Science (ATM)

**150. Introduction to Computer Methods in Physical Sciences (4)**  
 Lecture—3 hour; lecture/discussion—2 hours. Prerequisite: Mathematics 22B, Physics 9B, and a computer programming course such as Engineering Computer Science 30. Additional courses in fluid dynamics (course 121A or Engineering 103) and in Fourier transforms (Mathematics 118C 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) methods. Time series applications (time-permitting). Specific applications drawn from meteorology. Accelerated introduction to FORTRAN including programming assignments. Enrollment limited to 12, preference to Atmospheric Science majors. Offered in alternate years. (P/NP grading only)—I. Grotjahn

(change in existing course—eff. fall 05)

# Biological Sciences

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## New and changed courses in Biological Sciences (BIS)

### Lower Division Courses

#### 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.—I. (I.) Wilson

(new course—eff. spring 05)

# Biophotonics

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## New and changed courses in Biophotonics (BPT)

### Graduate Courses

#### **290. Biophotonics Seminar (1)**

Seminar—1 hour. Prerequisite: graduate standing or consent of instructor. Presentation of current research in the area of biophotonics by experts in the field, followed by group discussions. May be repeated up to three times for credit. (S/U grading only.)—I, II, III. (I, II, III.) Yeh

(new course—eff. winter 06)

# Biotechnology

## Changes in B.S. Major Requirements for Biotechnology Major

**Faculty.** Faculty includes members of the Departments of Agronomy and Range Science; Animal Science; Chemical Engineering and Materials Science; Computer Science; Engineering: Biological and Agricultural, Environmental Horticulture; Food Science and Technology; Land, Air and Water Resources; Plant Pathology; Pomology; Vegetable Crops; Viticulture and Enology; and the College of Biological Sciences.

### The Major Program

Every living organism, from the smallest and most primitive bacteria to every plant, insect, animal or human being, contains DNA as the primary genetic material. DNA directs all cellular processes, creating the incredible variety and diversity of living organisms in the biosphere. Biotechnology focuses on the mechanics of life processes and their application. Biotechnology means “life technology” and represents an integrated, multidisciplinary field, with a profound impact today on almost every aspect of human endeavor.

**The Program.** In the first two years, students develop a strong and general background in biological science with an emphasis on fundamental concepts and basic principles of genetics, molecular biology and cell biology. Three options, Animal Biotechnology, Plant Biotechnology, and Fermentation/Microbial Biotechnology, provide in-depth training and specialized knowledge in an aspect of biotechnology. Each option has a strong laboratory component to reinforce the theoretical concepts. Students also do an internship in a biotechnology company or university or government laboratory.

**Internships and Career Opportunities.** In the last decade, more industries are turning to biotechnology to solve problems and improve products, creating a growing job market for individuals trained in biotechnology in the agricultural, food and beverage, health care, chemical, pharmaceutical and biochemical, and environmental and bioremediation industries.

Graduates trained in the technologies designed for biotechnology will find their training applicable to advanced research in molecular biology, genetics, biochemistry, and the plant and animal sciences.

### B.S. Major Requirements

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>8</b>     |
| See College requirement.   |              |
| <b>Preparatory Subject Matter</b> .....  | <b>57-64</b> |
| Biological Sciences 1A, 1B, 1C .....   | 15           |
| Chemistry 2A, 2B, 2C .....   | 15           |
| Chemistry 8A, 8B or 118A, 118B, 118C or 128A, 128B, 128C, 129A .....                               | 6-12         |
| Mathematics 16A, 16B, or 21A, 21B .....  | 6-8          |
| Physics 7A, 7B .....   | 8            |
| Agricultural Management and Rangeland Resources 120 or Statistics 100 .....                        | 4            |
| Agricultural Management and Rangeland Resources 21 or Engineering: Computer Science 10 or 15 ..... | 3-4          |
| <b>Breadth/General Education</b> .....   | <b>24</b>    |
| <b>Depth Subject Matter</b> .....  | <b>26-34</b> |
| Biological Sciences 101 .....  | 4            |
| Microbiology 102 .....   | 4            |
| Animal Biology 102 or Biological Sciences 102 .....  | 3-4          |
| Animal Biology 103 or Biological Sciences 103 .....  | 3-4          |
| Biological Sciences 104 .....  | 3            |
| Molecular and Cellular Biology 161 .....   | 3            |
| Biotechnology 171 .....  | 3-4          |

|   |   |
|---|---|
| Internship or independent research; course 192 or 199 or Biotechnology 189L ..... | 3 |
| Undergraduate research proposal: Biotechnology 188 (optional) .....               | 3 |
| Honors undergraduate thesis (optional) .....                                      | 1 |

### Areas of Specialization (choose one)

#### Fermentation/Microbiology Biotechnology Option..... 31-32

|   |       |
|---|-------|
| Engineering: Chemical 160, Microbiology 140, 150, or Plant Pathology 130 and Microbiology 170; Microbiology 102L or Food Science and Technology 104L; Molecular and Cellular Biology 160L or Plant Biology 161A ..... | 16-17 |
| Restricted Electives .....  | 15    |
| Select from:  |       |

Engineering: Chemical 161C, 161L, Chemistry 107A, 107B, Engineering: Biological Systems 160, Food Science and Technology 102A, 102B, 104, 104L, 110A, 110B, 123, 123L, Microbiology 105, 140, 150, 155L, 170, Molecular and Cellular Biology 120L, 164, Plant Biology 161B, Plant Pathology 130, 140, Viticulture and Enology 124, 124L, 128, 135, 186.

#### Plant Biotechnology Option..... 30

|  |    |
|--|----|
| Molecular and Cellular Biology 126, Plant Biology 152, 160, 161A, 161B ..... | 18 |
| Restricted Electives .....   | 12 |

Select at least one course from each of the following areas:

##### (a) Pests, Pathogens and Production

Agricultural Management and Rangeland Resources 118, Entomology 110, Molecular and Cellular Biology 120L, 164, Nematology 100 or 110, Plant Pathology 120, 130, 140, Plant Biology 143, 146, 153, 154, 172.

##### (b) Growth and Development

Molecular and Cellular Biology 120L, Plant Biology 105, 111, 112, 157, 158, Plant Pathology 140.

#### Animal Biotechnology Option ..... 33

|   |    |
|---|----|
| Animal Genetics 111, Neurobiology, Physiology, and Behavior 101, Molecular and Cellular Biology 150, 150L, 182, Veterinary Medicine 170 ..... | 21 |
| Restricted Electives .....  | 12 |

Select at least one course from each of the following areas:

##### (a) Animal cell biology/microbiology/immunology

Animal Genetics 101, Microbiology 102L, Molecular and Cellular Biology 120L, 160L, Pathology, Microbiology, and Immunology 126, 126L, 127, 128, Physiology, Molecular, Cellular, and Integrative Physiology 200L, Plant Biology 161A, 161B.

##### (b) Animal reproduction and breeding

Animal Genetics 107, Animal Science 131, 140, Avian Sciences 103, 121, Evolution and Ecology 102, Molecular and Cellular Biology 164, Neurobiology, Physiology, and Behavior 121, 121L, Plant Pathology 140.

**Bioinformatics Option..... 31**

course 150, Engineering: Computer Science 20, 30, 124, Molecular and Cellular Biology 182 or Neurobiology, Physiology, and Behavior 131 .....19

Restricted Electives .....12

Select from:

Animal Genetics 120, Engineering Applied Science 289, Engineering: Computer Science 40, 50, 110, 122A, 140A, 150, 154A, Evolution and Ecology, 102, 103, Mathematics 124, Statistics 131A, 141.

**Unrestricted Electives .....21-37**

**Total Units for the Major..... 180**

**Major Adviser:** J.I. Yoder (Vegetable Crops), 133 Asmundson Hall.

**Advising Center** for the major is located in 1220A Plant and Environmental Sciences.

**New and changed courses in Biotechnology (BIT)**

**Upper Division Courses**

**150. Applied Bioinformatics (4)**

Lecture—2 hours; laboratory/discussion—2 hours. Prerequisite: Computer Science Engineering 10 or 15 or Agricultural Management and Rangeland Resources 21; Biological Sciences 101 and 104; Agricultural Management and Rangeland Resources 120 or Statistics 13 or Statistics 100. Concepts and programs 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. Limited enrollment. Two units of credit for students who have completed Computer Science Engineering 124.—I. (I.) Dubcovsky, Neale

(new course—eff. spring 05)

**171. Professionalism and Ethics in Genomics and Biotechnology (3)**

Discussion—2 hours; lecture—1 hour; . 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 evaluating personal and social consequences.—I, II, III. (I, II, III.) Yoder, Bradford

(change in existing course—eff. winter 05)

# Chemistry

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## New and changed courses in Chemistry (CHE)

### Graduate Courses

#### 204. Mathematical Methods in Chemistry (3)

Lecture—3 hours. Prerequisite: course 110C; graduate standing in Chemistry. Introduction to mathematical and numerical methods in chemistry. Real and complex functions. Methods of integration. Differential equations. Linear algebra and matrices. Special functions. Integral transforms. Statistics.—I. (I.)

(new course—eff. fall 05)

#### 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.

(new course—eff. fall 05)

#### 231. Organic Synthesis: Methods and Strategies (3)

(cancelled course—eff. winter 06)

#### 231A. Organic Synthesis: Methods and Strategies (4)

Lecture—3 hours; lecture/discussion—3 hours. Prerequisite: course 128C or equivalent. Current strategies and methods in synthetic organic chemistry. Focus on construction of carbon frameworks, control of relative and absolute stereochemistry and retrosynthetic strategies. Use of databases and molecular modeling software in multistep strategies. Only one unit of credit for students who have completed course 131. Not open for credit to students who have taken course 231.—II. (II.)

(new course—eff. winter 06)

#### 231B. Advanced Organic Synthesis (3)

Lecture—3 hours. Prerequisite: course 231A. Current strategies and methods in synthetic organic chemistry. Continuation of course 231A. Organic synthesis of complex target molecules. Stereochemical considerations and asymmetric synthesis. Organometallics for selective transformations. Carbocyclic and heterocyclic ring formation. Not open for credit to students who have taken course 231.—III. (III.)

(new course—eff. winter 06)

#### 280. Seminar in Ethics for Scientists (2)

Seminar—2 hours. Prerequisite: 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 Engineering Chemical and Materials Science 280 and Physics 280.) (S/U grading only.)—III. (III.)

(new course—eff. fall 05)

## Chicana/Chicano Studies

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### New and changed courses in Chicana/Chicano Studies (CHI)

#### Lower Division Courses

##### 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 context, and policy issues. GE Credit: SocSci.—I, III, VII. Flores-Ortiz, Pesquera

(new course—eff. spring 05)

##### 40. Comparative Health: Leading Causes of Death (4)

Lecture—3 hours; discussion—1 hour. Introduction to the epidemiology of the leading causes of death for ethnic and racial minorities. Assessment of the disproportionate rate at which ethnic and racial minorities suffer and die prematurely from injuries and chronic and infectious diseases. GE credit: Div, Wrt.—II, III. (II, III.) Garcia

(new course—eff. winter 05)

##### 60. Chicana and Chicano Representation in Cinema (4)

Lecture—3 hours; discussion—1 hour; film viewing—2 hours. Introductory-level study of Chicana and Chicano representation in cinema. Depiction of Chicana and Chicano experience by Chicana/o filmmakers, as well as by non-Chicanos, including independent filmmakers and the commercial industry. GE credit: ArtHum, Div.—I. (I.) De la Mora

(change in existing course—eff. spring 05)

##### 65. New Latin American Cinema (4)

Lecture/discussion—2 hours; discussion—1 hour; film viewing—3 hour. Historical, critical, and theoretical survey of the cinemas of Latin America and their relationship to the emergence of U.S. Latino cinema. Emphasis on representation and social identity including gender, sexuality, class, race and ethnicity. GE Credit: ArtHum, Div.—II, III. de la Mora

(new course—eff. spring 05)

##### 92. Internship (1-12)

Internship—3-36 hours. Prerequisite: course 10 or consent of instructor. Academic guidance combined with internship in community agencies serving Mexican/Latina/Latino/Chicana/Chicano clients. Use of bilingual skills and knowledge of history, culture, economics, politics and social issues. May be repeated for credit up to 12 units.

(new course—eff. fall 04)

#### Upper Division Courses

##### 112. Globalization, Transnational Migration, and Chicana/o and Latina/o Communities (4)

Lecture—4 hours. Prerequisite: course 10. Chicana/o and Latina/o 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, Wrt.—I, III. (I, III.) Pesquera, Flores-Ortiz, de la Torre

(new course—eff. winter 05)

##### 123. Psychological Perspectives on Chicana/o and Latina/o Children and Adolescents (4)

Lecture—3 hours; term paper. Prerequisite: course 10 or 21, and upper division standing. Psychological and educational development of Chicano/Latino children and adolescents, with particular attention to the formation of ethnic, gender, class, race, and sexual identities. GE Credit: Div, SocSci, Wrt.—II, (II). Flores-Ortiz

(new course—eff. spring 05)

##### 150. The Chicana and Chicano Movement (4)

Lecture/discussion—3 hours; term paper. Development of the Chicano Movement within the context of the socio-political movements of the 1960's in a national and global perspective. Ideological, political perspectives and the implications for political strategies. GE Credit: ArtHum, Div, Wrt.—I, III. Chavez-Garcia, de la Torre, Pesquera

(new course—eff. spring 05)

##### 192. Internship in the Chicana/Chicano/Latina/Latino Community (1-12)

Internship—3-36 hours. Prerequisite: course 10, 21, or 50, Spanish 3 or the equivalent. Academic guidance combined with internship in community agencies serving Mexican/Latina/Latino/Chicana/Chicano clients. Use of bilingual skills and knowledge of history, culture, economics, politics and social issues. Internship project required. May be repeated for credit up to 12 units. (P/NP grading only.)

(change in existing course—eff. summer session II 04)



# Chinese

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## New and changed courses in Chinese (CHN)

### Lower Division Courses

#### 1A. Accelerated Intensive Elementary Chinese (15)

Lecture/discussion—15 hours. Prerequisite: placement exam. Special 12 week accelerated, intensive summer session course that combines the work of courses 1, 2, and 3. Introduction to Chinese 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.—Liu

(new course—eff. summer special session 04)

### Upper Division Courses

#### 101. Chinese Film (4)

Lecture/discussion—3 hours; film viewing—3 hours. Prerequisite: History 9A or any course on traditional China, upper division standing. 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, racial, gender, and class politics of modern China. GE credit; ArtHum, Div.—III. (III.) Chen

(new course—eff. winter 05)

#### 102. Chinese American Literature (in English) (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing; course in Chinese history recommended. 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.—II. (II.) Chen

(new course—eff. winter 05)

#### 103. Modern Chinese Drama (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing; a course in Chinese history recommended. 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.—II. (II.) Chen

(new course—eff. winter 05)

# Clinical Nutrition

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## Change in B.S. Major Requirements for Clinical Nutrition Major

|  | UNITS        |
|--|--------------|
| <b>Written/Oral Expression</b> .....                                     | <b>8</b>     |
| English 3 or University Writing Program 1 .....                          | 4            |
| Communication 1 .....  | 4            |
| (Above courses simultaneously satisfy College requirement.)              |              |
| <b>Preparatory Subject Matter</b> .....                                  | <b>48-49</b> |
| Biological Sciences 1A, 1B.....  | 10           |
| Chemistry 2A, 2B, 2C, 8A, 8B.....  | 21           |
| Economics 1A or 1B.....  | 5            |
| Psychology 1 .....   | 4            |
| Sociology 1 or 3 or Anthropology 2.....                                  | 4-5          |
| Statistics 13 .....  | 4            |
| <b>Breadth/General Education</b> .....                                   | <b>6-24</b>  |
| Satisfaction of General Education requirement                            |              |
| <b>Depth Subject Matter</b> .....  | <b>88</b>    |
| Agricultural and Resource Economics 112 .....                            | 4            |
| Community and Regional Development 173 or<br>Education 110.....          | 4            |
| Animal Biology 102 and 103.....  | 10           |
| Biological Sciences 101 .....  | 4            |
| Food Science and Technology 100A, 100B, 101A, 101B,<br>108.....          | 15           |
| Food Service Management 120, 120L, 122 .....                             | 8            |
| Food Science and Technology 104-104L .....                               | 7            |
| Nutrition 111A and 111B, 112, 116A, 116AL, 116B 116BL,<br>118, 190 ..... | 31           |
| Neurobiology, Physiology, and Behavior 101, 101L.....                    | 8            |
| Additional upper division Nutrition electives.....                       | 4            |
| <b>Unrestricted Electives</b> .....                                      | <b>10-31</b> |
| <b>Total Units for the Major</b> .....                                   | <b>180</b>   |

# Communication

## Change in M.A. Name

The Department of Communication has changed the name of its Rhetoric and Communication M.A. program to Communication.

## New and changed courses in Communication (CMN)

### Upper Division Courses

#### 130. Group Communication Processes (4)

(cancelled course—eff. fall 04)

#### 144. Media Entertainment (4)

Lecture/discussion—4 hours. Prerequisite: course 102; course 141 recommended. Effects and appeal of media entertainment, emphasizing emotional reactions. Topics include key concepts of entertainment research such as mood management, and the respective features and emotional/social-psychological effects of genres such as comedy, mystery, thriller, sports, music, horror, and erotica.—III. (III.) Knobloch

(new course—eff. fall 04)

### Graduate Courses

#### 201. Theoretical Perspectives on Strategic Communication (4)

Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Explores the intentional use of discourse and nonverbal behavior to reach goals. Explores theories and models that elucidate the processes that enable the realization of intentions in message plans and discourse.—I. (I.) Berger

(new course—eff. fall 05)

#### 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, operationalization and theory construction. Emphasis on the critique of extant communication theories and the development of theory construction skills. Not offered every year.—III. Berger

(new course—eff. winter 06)

#### 210. Evaluation of Communication Effects (4)

Lecture—4 hours. Prerequisite: graduate standing; one course in Inferential Statistics; consent of instructor. Research methods for understanding communication effects, including the outcomes of communication interventions. Issues to be examined include measurement, experimental and quasi-experimental design, and evaluation research.—I. (I.) Motley

(new course—eff. fall 05)

#### 211. Audience Assessment and Analysis (4)

Seminar—4 hours. Prerequisite: graduate standing; one course in Inferential Statistics; consent of instructor. Interdisciplinary perspectives on the “audience” concept. Methodological approaches to audience segmentation based on demographics and geodemographics, psychographics, audience needs and assessments, and values/lifestyles. Formative and summative research methods for assessing audience attitudes, values, beliefs and behaviors.—I. (I.) Taylor

(new course—eff. fall 05)

#### 213. Theory Development in Communication Inquiry (4)

(cancelled course—eff. fall 05)

#### 214. Mass Communication Theory and Research (4)

(cancelled course—eff. fall 05)

#### 215. Mass Communication and Social Change (4)

(cancelled course—eff. fall 05)

#### 220. Persuasion Theories and Message Design (4)

Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Major social scientific theories and perspectives on attitude change and persuasion. Application of persuasion theories and principles to persuasive message design in applied contexts.—III. (III.) Hughes

(new course—eff. fall 05)

#### 221. Communication and Cognition (4)

Seminar—4 hours. Prerequisite: graduate standing; consent of instructor. Explores the cognitive structures and processes that enable the production, comprehension and interpretation of messages in face-to-face and mediated communication contexts. Explores the communication outcomes associated with these processes. Offered in alternate years.—(II.) Berger

(new course—eff. fall 05)

#### 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. Not offered every year. Berger

(new course—eff. fall 05)

#### 240. Advocacy in Contemporary Society (4)

(cancelled course—eff. fall 05)

#### 242. Proseminar in Symbolic Behavior (4)

(cancelled course—eff. fall 05)

#### 243. Persuasion Theory (4)

(cancelled course—eff. fall 05)

#### 248. Media Criticism (4)

(cancelled course—eff. fall 05)

#### 249. Interpersonal Communication Theory (4)

(cancelled course—eff. fall 05)

# Community and Regional Development

## Changes in B.S. Major Requirements for Community and Regional Development Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>4-12</b>  |
| One course from English 3 or University Writing Program 1, 18, 19, 101, 104A, 104B, 104C, 104D, or 104E .....  | 4            |
| Additional course from above Comparative Literature 1, 2, 3, 4, Native American Studies 5 or Communication 1, or University Writing Program 102.....   | 4            |
| Additional course from University Writing Program 101, 102 104A, 104B, 104C, 104D, or 104E .....   | 4            |
| <b>Preparatory Subject Matter</b> .....  | <b>22-25</b> |
| Community and Regional Development 1, 2.....   | 8            |
| Agricultural Systems and Environment 21 or Computer Science Engineering 15 .....   | 3-4          |
| Economics 1A or 1B.....  | 5            |
| Anthropology 2 or Sociology 1 .....  | 4-5          |
| Statistics 13 or 32 or Sociology 46B.....  | 3-4          |
| <b>Breadth/General Education Requirement</b> .....   | <b>24</b>    |
| Satisfaction of General Education requirement  |              |
| <b>Depth Subject Matter</b> .....  | <b>40</b>    |
| Two courses from Community and Regional Development 151, 151L, 160, 161, or 168 .....  | 8            |
| Two courses from Community and Regional Development 140, 142, 152, 153A or 153B.....   | 8            |
| Community and Regional Development 154, 157, 158, or 171 .....   | 4            |
| Two courses from Community and Regional Development 164, 172, 173, 174, or 176.....  | 8            |
| Two courses from Community and Regional Development 118, 141, 156, 162, or International Agricultural Development 103 .....  | 8            |
| Internship: Community and Regional Development 192 .....   | 4            |
| <b>Areas of Specialization</b>   |              |
| Take 20 units from each of two options or 40 units from one option. The Areas of Specialization must include two Community and Regional Development courses. Up to 4 units of variable-unit course work may be counted toward this requirement (e.g., Community and Regional Development 192). |              |
| <b>Community Groups Option</b> .....   | <b>40</b>    |
| Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.   |              |
| <i>General</i> (Community and Regional Development 151, 152, 153, 154, 157, 160, 161, 172, 176, American Studies 156, Human Development 103)   |              |
| <i>African Americans</i> (African American and African Studies 100, 123, 130, 145A, Sociology 128, 129, 130, 134)  |              |
| <i>Asian Americans</i> (Asian American Studies 100, 110, 111, 112, 155)  |              |
| <i>Chicanas/os</i> (Chicana/o Studies 100, 110, 111, 120, 121, 131, 132, 140, Political Science 168)   |              |
| <i>Native Americans</i> (Native American Studies 115, 116, 117, 118, 122, 130A, 130B, 134, 156, 181B)  |              |
| <i>Youth</i> (American Studies 152, Human Development 100A, 100B, 101, 102, 103, 130, 131, 140, 140L, 141, 142, 151, Psychology 112, Sociology 122, 152)   |              |

*Aging* (Community and International Health 180, Human Development 100C, 143, 160, 162, 191, Sociology 154)  
*Gender* (American Studies 154, Anthropology 130, Political Science 166, Psychology 114, Sociology 132, 133, 145B, Women's Studies 103, 130, 140, 187)  
*Specially Challenged Individuals* (Education 115, Human Development 130, 131)  
*Class* (Sociology 140, 185)

## Economic Development Option .....

Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.

*Community Economic Development* (Agricultural and Resource Economics 100A, 115A, 115B, 144, Community and Regional Development 118, 140, 141, 152, 156, 162, Economics 104, 105, 130, 131, 151A, 151B, 138, Sociology 139)  
*Administration* (Agricultural and Resource Economics 112, 113, 171A, Community and Regional Development 168, Political Science 183, Psychology 156, Sociology 180A, 180B)  
*Communication* (Communication 114, 130, 136, 140, 152, Community and Regional Development 173)  
*Political Dynamics of Economic Development* (Agricultural and Resource Economics 146, Community and Regional Development 157, 158, 171, 172, Environmental Horticulture 110, 112, Environmental Science and Policy 160, 161, 168A, 168B, 171, 172, 179, Political Science 100, 102, 105, 107, 108, 109, 142, 175, Sociology 185)

## 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, 168, Agricultural Economics 100A, 171A, Computer Science Engineering 167, Economics 104, 105, 115A, Political Science 100, 105, 142, 155, 181, 182, 183)  
*Communication* (Communication 114, 130, 134, 136, 140, 152, Community and Regional Development 173, 175, Education 120, 163)  
*Human Resources* (Community and Regional Development 151, 160, 161, 172, 176, Economics 151B, Food Service Management 123, Psychology 143, 144, 145, 183, Sociology 120, 128, 129)  
*Management* (Community and Regional Development 118, 140, 141, 154, 161, 162, 164, 168, Agricultural Economics 112, 113, History 174A, Political Science 188, Sociology 138, 139, 158, 159, 180A, 180B)

## 162. People, Work and Technology (4)

Lecture—4 hours. Prerequisite: upper division standing; eight units of sociology, anthropology, or community and regional development. Relationship between work, technology, and people's lives. Such topics as industrialization, bureaucratization, automation, the structure of work-linked communities, education and the labor market, work and the economic system and the future of work.—III. (III.) Wells

(change in existing course—eff. fall 05)

**Policy and Planning Option..... 40**

Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.

*General* (Community and Regional Development 118, 142, 151, 153, 154, 156, 160, 161, 162, 168, Environmental Science and Policy 165, Political Science 100, 103, 105, 108, 109, 142, 173, 183)

*Environmental Policy* (Political Science 107, 175, Environmental Science and Policy 110, 160, 161, 164, 166, 168A, 168B, 171, 172, 173, 179, Environmental and Resource Sciences 121)

*Law and Policy* (Sociology 120, 152, 155, Political Science 103, 105, 154, 155, 181, 182)

*Urban and Regional Planning* (Community and Regional Development 140, 141, 152, 157, 158, 159, 171, Economics 115A, Environmental Planning and Management 110, 134, Environmental Science and Policy 171, 173, Geography 155, Political Science 100, 101, 102)

**Social Services Option ..... 40**

Students must consult with a faculty adviser to identify an emphasis within the option and to select suitable courses.

*Community Health* (Community and Regional Development 164, Community Health 101, Environmental Science and Policy 126, Psychology 160, Sociology 154)

*Aging* (Community Health 180, Human Development 100C, 143, 160, 162)

*Counseling* (Communication 134, 135, Education 160, 163, Human Development 121, 130, Psychology 143, 145, 168)

*Youth* (American Studies 152, Human Development 100A, 100B, 101, 102, 103, 130, 131, 140, 140L, 141, 142, 151, Psychology 112, Sociology 122, 152)

*The Family* (Human Development 110, Sociology 131, 134, 135)

*Education* (Community and Regional Development 173, 175, Agricultural Education 100, 160, 163, Education 100, 110, 114, 120, Psychology 136, Sociology 124)

*Bilingual Education* (Education 151, 152, 153, Psychology 132)

**Unrestricted Electives ..... 38-40**

**Total Units for the Degree..... 180**

**Changes in Minor Requirements for Community and Regional Development Minor**

**Minor Program Requirements:**

The Community and Regional Development faculty offers the following minor program:

UNITS

**Community Development ..... 24**

Community and Regional Development 1 ..... 4

Five courses selected from Community and Regional Development 140, 141, 142, 151 and 151L, 157, 158, 162, 164, 168, 171, 172, 173, 176 ..... 20

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

**Upper Division Courses**

**162. People, Work and Technology (4)**

Lecture—4 hours. Prerequisite: upper division standing; eight units of sociology, anthropology, or community and regional development. Relationship between work, technology, and people's lives. Such topics as industrialization, bureaucratization, automation, the structure of work-linked communities, education and the labor market, work and the economic system and the future of work.—III. (III.) Wells (change in existing course—eff. fall 05)

**Graduate Courses**

**248. Social Policy, Welfare Theories and Communities (4)**

Seminar—4 hours. Prerequisite: graduate standing. Theories and comparative histories of modern welfare states and social policy in relation to legal/normative, organizational, and administrative aspects. Analysis of specific social issues within the U.S./California context. Not open for credit to students having completed course 248A and 248B. Offered in alternate years.—(III.) Hirtz (new course—eff. spring 05)

# Comparative Literature

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## New and changed courses in Comparative Literature (COM)

### Upper Division Courses

#### 145. Representations of the City (4)

Lecture—2 hours; discussion—1 hour; writing. Exploration of the representation of the city in major translated 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. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—I. Sharlet

(change in existing course—eff. spring 04)

#### 165. Caribbean Literatures (4)

Lecture/discussion—4 hours. Prerequisite: upper division standing. Comparative approach to the multi-lingual, multi-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.—II. (II.) Blanchard

(change in existing course—eff. fall 04)

#### 165S. Caribbean Literatures (4)

Lecture/discussion—4 hours. Prerequisite: upper division standing. Comparative approach to the multi-lingual, multi-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 165. GE credit: ArtHum, Div, Wrt.—II. (II.) Blanchard

(new course—eff. fall 04)

# Computer Science

## Changes in Major Requirements for Computer Science Major

The computer science major prepares students for careers involving the design of computer systems and their application to science, industry, and management.

**The Program.** Students taking this major receive solid grounding in fundamentals of computer languages, operating systems, computer architecture, and the mathematical abstraction required to use the computer in solving complex tasks. For students interested in the engineering aspects of computer science, see Engineering: Computer Science.

**Career Alternatives.** The computer science program prepares students for advanced work in computer science or in other disciplines requiring advanced knowledge of the use of computers.

### B.S. Major Requirements:

|   | UNITS          |
|---|----------------|
| <b>Preparatory Subject Matter</b> .....   | <b>52-56</b>   |
| Mathematics 21A-21B-21C, 22A-22B .....  | 18             |
| Statistics 32 .....   | 3              |
| Computer Science Engineering 20, 40.....  | 8              |
| Computer Science Engineering 30.....  | 4              |
| Computer Science Engineering 50 or Electrical and Computer Engineering 70 .....   | 4              |
| One series from the following four .....  | 15-19          |
| (a) Chemistry 2A-2B-2C  |                |
| (b) Chemistry 2A-2B and Biological Sciences 1A  |                |
| (c) Chemistry 2AH-2BH-2CH   |                |
| (d) Physics 9A-9B-9C and Mathematics 21D  |                |
| <b>Depth Subject Matter</b> .....   | <b>53</b>      |
| Computer Science Engineering 110; 120 or 122B (completion of only 120 or 122B will satisfy the core requirement, but not a computer science elective simultaneously); 122A, 140A; 150, 154A-154B.....   | 28             |
| Computer science electives .....  | 13             |
| Minimum of 4 courses and a minimum of 13 units from Computer Science Engineering 120, 122B (completion of only 120 or 122B will satisfy the core requirement, but not a computer science elective simultaneously), 130, 140B, 142, 145, 152A, 152B, 152C, 153, 158, 160, 163, 165A, 165B, 170, 175, 177, 178, 188; one course (minimum of 3 units) from approved 192, 199; Electrical and Computer Engineering 180A, 180B, Mathematics 160 (completion of Mathematics 160 will satisfy either a computer science elective or a mathematics elective, but not both requirements simultaneously). |                |
| Mathematics electives .....   | 12             |
| Mathematics 108; and one course from Mathematics 115A, 115B, 115C, 127A, 127B, 127C, 131 (or Statistics 131A), 141, 145, 147, 149A, 149B, 150A, 150B, 150C; and one upper division Mathematics course numbered below 188 except not 111   |                |
| <b>Total Units for the Major</b> .....  | <b>104-109</b> |
| <b>Major Advisers.</b> N. Matloff, H. Chen, X. Liu, R. Olsson, P. Rogaway   |                |

## Changes in Minor Requirements for Computer Science Minor

UNITS

|  |           |
|--|-----------|
| <b>Computer Science</b> .....  | <b>24</b> |
| Computer Science Engineering 50.....   | 4         |
| Computer Science Engineering 110.....  | 4         |
| Upper division Computer Science Engineering courses.....   | 16        |
| Select from Computer Science Engineering 120, 122A, 122B, 130, 140A, 140B, 142, 145, 150, 152A, 152B, 152C, 153, 154A, 154B, 158, 160, 163, 165A, 165B, 170, 175, 177, 178, 189A-L, combined maximum of 3 units from approved 192 and 199 courses. |           |

# Contemporary Leadership

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## Changes in Minor Requirements for Contemporary Leadership Minor

|   | UNITS     |
|---|-----------|
| <b>Contemporary Leadership</b> .....  | <b>24</b> |
| Science and Society 130 .....   | 4         |
| Science and Society 192 concurrent with an approved internship .....  | 2         |
| Science and Society 190X.....   | 2         |
| One upper division course from each of the following four areas:  |           |
| Computer Science 188, English 107, Environmental Science and Policy 164, Military Science 143, Native American Studies 156, Nature and Culture 120, Philosophy 115, Religious Studies 150, Science and Society 120, Veterinary Medicine 170 ..... | 4         |
| Anthropology 139AN, Communication 130, 134, Community and Regional Development 172, 174, Linguistics 163, Military Science 131, Psychology 145, Sociology 126, University Writing Program 104.....  | 4         |
| American Studies 15, Anthropology 123BN, Community and Regional Development 152, 164, 173, Psychology 156, Sociology 30A, 156, 183, Women's Studies 140 .....   | 4         |
| American Studies 156, Community and Regional Development 176, English 179, History 173, 178, Political Science 166, 176, Sociology 130, 134, Textiles and Clothing 174 .....  | 4         |

**Minor Adviser.** Consult Program Office.



# Critical Theory

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## New and changed courses in Critical Theory (CRI)

### Graduate Courses

#### **200B. Problems in Critical Theory (4)**

Seminar—3 hours; term paper. Focused study of a particular critical theoretical approach, school or perspective. Topics may include but are not limited to: critical approaches to the study of culture, film, historiography, visual culture, the body, and aesthetics. May be repeated for credit with consent of instructor if topic differs.—I, II, III. (I, II, III.)

(change in existing course—eff. winter 05)

#### **200C. History of Critical Theory (4)**

Seminar—3 hours; term paper. Critical analysis and discussion of pre-twentieth century theories of literary and cultural criticism. Topics may include but are not limited to: ancient and early modern philosophy; nature and culture in the Renaissance; theories of Mimesis from antiquity to the Renaissance. May be repeated for credit with consent of instructor if topic differs.—I, II, III. (I, II, III.)

(change in existing course—eff. winter 05)

# Design

## Changes in B.S. Major Requirements for Design Major

(College of Agricultural and Environmental Sciences)

Major discontinued.

## New Major for Design

(College of Letters and Science)

### A.B. Major Requirements

Depth in one area of design is achieved by completing all of the requirements in one of the emphases listed below.

|  | UNITS        |
|--|--------------|
| <b>Interior Architecture emphasis:</b>   |              |
| <b>Preparatory Subject Matter</b> .....  | <b>26</b>    |
| Design 1, 14, 15, 16 .....   | 14           |
| Design 21 .....  | 4            |
| Design 40A, 40B .....  | 8            |
| <b>Depth Subject Matter</b> .....  | <b>44</b>    |
| Design 134A-134B-134C, 138, 180A-180B.....   | 24           |
| Two courses from Design 121, 135A, 135B, 150A, 150B.....   | 8            |
| Design 144 .....   | 4            |
| Two courses from AHI 168, 184, 188A, 188B.....   | 8            |
| <b>Total Units for the Major</b> .....   | <b>70</b>    |
| <b>Textile and Fashion Design emphasis:</b>  |              |
| <b>Preparatory Subject Matter</b> .....  | <b>34</b>    |
| Design 1, 14, 15, 16 .....   | 14           |
| Three courses from 18, 23, 24, 77A, 77B.....   | 12           |
| Design 40A, 40B.....   | 8            |
| <b>Depth Subject Matter</b> .....  | <b>40</b>    |
| Select seven courses from 122, 124, 125, 127, 131, 132A, 132B, 132C, 160A, 160B, 170A, 170B, 177 ..... | 28           |
| Design 142A, 142B, 143.....  | 12           |
| <b>Total Units for the Major</b> .....   | <b>74</b>    |
| <b>Visual Communication and Presentation emphasis:</b>   |              |
| (Select courses from one option)   |              |
| <b>Preparatory Subject Matter</b> .....  | <b>26-30</b> |
| Option 1-Graphic Design.....   | 26           |
| Design 1, 14, 15, 16.....  | 14           |
| Design 13 .....  | 4            |
| Design 40A, 40B .....  | 8            |
| Option 2 -Presentation Design.....   | 30           |
| Design 1, 14, 15, 16.....  | 14           |
| Design 18, 21 .....  | 8            |
| Design 40A, 40B .....  | 8            |
| <b>Depth Subject Matter</b> .....  | <b>44</b>    |
| Option 1 -Graphic Design.....  | 44           |
| Design 113, 115 .....  | 8            |
| Design 152, 153, 154.....  | 12           |
| One course from Design 156, 157, 158 .....   | 4            |
| Two courses from one of the following sequences .....  | 8            |
| Design 156, 157, 158, 159  |              |
| Design 134A, 134B, 134C  |              |
| Design 150A, 150B  |              |
| Design 160A, 160B  |              |
| Select three courses from Design 142A, 142B, 143, 144, 145, AHI 110, 168, 184, 188A, 188B, 189.....    | 12           |

|   |    |
|---|----|
| Option 2 -Presentation Design.....  | 44 |
| Design 156, 157, 158.....   | 12 |
| Design 134A, 134B, 134C.....  | 12 |
| Design 150A, 150B .....   | 8  |
| Select three courses from Design 142A, 142B, 143, 144, 145, AHI 110, 168, 184, 188A, 188B, 189..... | 12 |

**Total Units for the Major**..... **70-74**

### Comprehensive Design emphasis:

|  |           |
|--|-----------|
| <b>Preparatory Subject Matter</b> .....              | <b>34</b> |
| Design 1, 14, 15, 16 .....                           | 14        |
| Three courses from 13, 18, 21, 23, 24, 77A, 77B..... | 12        |
| Design 40A, 40B.....                                 | 8         |

**Depth Subject Matter**..... **40**

|   |    |
|---|----|
| Select seven upper division Design courses with advisor approval .....                              | 28 |
| Select three courses from Design 142A, 142B, 143, 144, 145, AHI 110, 168, 184, 188A, 188B, 189..... | 12 |

**Total Units for the Major**..... **74**

## New and changed courses in Design (DES)

### Lower Division Courses

#### 13. Photography for Designers (4)

Studio—6 hours; lecture—2 hours. Prerequisite: course 1, 14, 15. Photography for designers with emphasis on 35mm camera photography, black and white processes, and darkroom techniques. Brief introduction to digital photography. The role of photography within society. Critical analysis of photographs. Priority given to Design majors.—V, VII. (V, VII.) Sylva

(change in existing course—eff. summer session I 05)

#### 16. Graphic Design and Computer Technology (4)

Studio—6 hours; lecture—1 hour. Prerequisite: course 1, 14, 15. Introduction to computers in design with emphasis on development of a general understanding of graphic design, including theory, practice, and technology. Includes principles of color, visual organization, visual hierarchy, typography, image enhancement. Projects created on Macintosh computers. Priority given to sophomore and junior Design students.—I, II, III, V, VII. (I, II, III, V, VII.) Sylva

(change in existing course—eff. fall 05)

#### 22. Visual Communication: Image and Type (4)

(cancelled course—eff. fall 05)

### Upper Division Courses

#### 115. Letterforms and Typography (4)

Studio—6 hours; lecture—2 hours. Prerequisite: course 1, 14, 15, 16. Fundamentals of letterforms and typography. Characteristics of typefaces; formatting and composition of type. Principles of legibility, visual hierarchy, rules and blocks, grids, and images as they relate to typography will be discussed. Not available for credit to students having completed course 22.—II, III, V, VII. (II, III, V, VII.) Nguyen

(new course—eff. summer session I 05)

#### 134A. Introduction to Interior Design - Residential (4)

Studio—5 hours; lecture/discussion—2 hours. Prerequisite: course 1, 14, 15, 16, and 21. Introduction to the theory and practice of interior design with focus on residential spaces. Basic methods of design conceptualization, development, and presentation. For Design majors only.—I, V. Harrison

(change in existing course—eff. fall 05)

**134B. Introduction to Interior Design - Commercial and Technical Spaces (4)**

Studio—5 hours; lecture—2 hours. Prerequisite: Course 1, 14, 15, 16, 21, 134A. Introduction to the theory and practice of interior design with focus on small commercial and technical spaces. Archetypal spaces, non-residential building systems, ADA accessibility, design programming and research methods. Priority to Design majors.—II, VII. (II, VII.) Harrison

(change in existing course—eff. winter 06)

**134C. Introduction to Interior Design - Technical Spaces (4)**

(cancelled course—eff. spring 06)

**136. Recording Historic Structures (4)**

(cancelled course—eff. fall 04)

**138. Materials and Methods in Interior Design (4)**

Lecture/discussion—3 hours; project—1 hour. Prerequisite: course 1, 14, 15, and 21. Introduction to the finish materials used for interior design with special emphasis on sustainable and recycled products. Performance factors, relative costs and energy impacts, installation conditions and construction details, and design potential for a full range of interior materials. Two field trips required. Offered in alternate years.—I. Harrison

(change in existing course—eff. fall 05)

**139. Contemporary Furnishings (4)**

(cancelled course—eff. fall 04)

**142A. World Textiles: Eastern Hemisphere (4)**

Lecture—4 hours. Prerequisite: course 1; Art History 1A, 1B, 1C, or 1D recommended. Social contexts, meanings, aesthetics, stylistic developments, and methods significant in eastern hemisphere textiles. Emphasis on Japan, China, Indonesia, Oceania, Southern and Central Asia, Africa. GE credit: ArtHum, Div. Rivers

(change in existing course—eff. spring 06)

**142B. World Textiles: Western Hemisphere (4)**

Lecture—4 hours. Prerequisite: course 1, Art History 1A, 1B, or 1C recommended. Social context, aesthetics, stylistic developments and methods significant in western hemisphere textiles. Emphasis on the Middle East, Europe, and the Americas up to contemporary times. GE credit: ArtHum, Div. Rivers

(change in existing course—eff. spring 06)

**145. History of Visual Communication (4)**

Lecture—4 hours. Prerequisite: Art History 1A, 1B, or 1C; course 1; course 40 recommended. Historical developments of visual communication, concentrating on the technological and aesthetic development of graphic design; origins and manifestations of current issues in visual communication; provide framework for analysis of current and future trends in visual communication. Priority to Design majors.—I. (I.) Nguyen

(change in existing course—eff. fall 05)

**154. Visual Communication: Message Campaign Design (4)**

Studio—6 hours; lecture—2 hours. Prerequisite: courses 113, 115, 117. Priority given to Design majors. Principles and application of visual design strategies for advertising. Emphasis on promotion of design for social change. Creation of public visual-media campaign. Not open for credit to students who have completed course 152B.—II, III, V. (II, III, V.) Sylva

(change in existing course—eff. winter 06)

**160A. Textile Design: Patterns and Resists (4)**

Studio—8 hours. Prerequisite: courses 1, 14, 15, and 77A. Exploration of traditional and contemporary process to create images and patterns on fabric using disperse, fiber-reactive, vat, acid dyes, and textile pigments. Emphasis on individual exploration and interpretation of processes and techniques.—Rivers

(change in existing course—eff. fall 04)

**160B. Textile Design: Screen Printing and Advanced Techniques (4)**

Studio—8 hours. Prerequisite: course 160A. Screen printing on fabrics, textile design and soft-product development, and integration of hand-produced and digitally generated imagery on cloth. Field trip required.—Rivers

(change in existing course—eff. fall 04)

**170A. Fashion Design: Unique Expression (4)**

Studio—8 hours. Prerequisite: course 1, 14, 15, and 77B or consent of instructor. Exploration of fashion design as an expression of contemporary and projected individual image. Emphasis on developing two-dimensional conceptualizations of ideas and translating them into one-of-a-kind garments utilizing new fabric technologies and archetypal forms. Field trip required.

(change in existing course—eff. fall 04)

**177. Computer-Assisted Apparel Design (4)**

Studio—8 hours. Prerequisite: courses 16, 77A, 77B, 160A, 170A, 170B. Advanced exploration of apparel design processes for industry with emphasis on computer-assisted design applications. Field trip required.

(change in existing course—eff. fall 04)

**180C. Senior Project in Interior Architecture (4)**

(cancelled course—eff. fall 04)

## Dramatic Art

### New and changed courses in Dramatic Art (DRA)

#### Lower Division Courses

##### 1. Theatre, Performance and Culture (4)

Lecture—3 hours; discussion—1 hour. Introductory investigation of the nature of performance, moving from performance theory to consideration of various manifestations of performance including theatre, film and media, performance art, dance, sports, rituals, political and religious events, and other “occasions.” Not open to students who have completed course 1S. Not offered every year. GE credit: ArtHum, Div, Wrt.—Bogad, Hunter, Rossini

(change in existing course—eff. spring 05)

##### 15. Theatre, Performance and Culture (4)

Lecture—3 hours; discussion—1 hour. Introductory investigation of the nature of performance, moving from performance theory to consideration of various manifestations of performance including theatre, film and media, performance art, dance, sports, rituals, political and religious events, and other “occasions.” For Short Term Programs Abroad. Not open to students who have completed course 1. Not offered every year. GE credit: ArtHum, Div, Wrt.—McCutcheon

(new course—eff. spring 05)

#### Upper Division Courses

##### 111S. Representation and Identity in Culture and Cinema (4)

Lecture/discussion—2 hours; film viewing—4 hours. Issues of personal and collective identity via study of film narratives from different cultures. Reflection of dominant cultural identities in film. Taught in Australia. GE credit: ArtHum, Div, Wrt.—III. (III.) McCutcheon

(new course—eff. spring 06)

##### 124E. Costume Design for Film (4)

Lecture/discussion—4 hours. Prerequisite: course 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.—II. (II.) Morgan

(new course—eff. winter 05)

##### 144. Introduction to Traditional Chinese Physical Culture (4)

Lecture/discussion—4 hours. Traditional Chinese Wushu practices, explored through practical work in dance laboratory conditions. Integration of practice with conceptual analysis; contemporary social, educational and artistic applications.—II. (II.) Hunter

(new course—eff. spring 05)

##### 146A. Professional Track Modern Dance I (3)

Laboratory/discussion—6 hours. Prerequisite: course 40B; consent of instructor. Professionally oriented performance training. Rigorous, consistent training regimen based on traditional modern dance technique. Breath and voice, skeletal and muscular placement, moving from the spine, contraction technique, movement intention. May be repeated two times for credit.—I. (I.) Grenke

(new course—eff. fall 04)

##### 146B. Professional Track Modern Dance II (3)

Laboratory/discussion—6 hours. Prerequisite: courses 40B and 146A; consent of instructor. Continuous 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 two times for credit.—II. (II.) Grenke

(new course—eff. spring 05)

##### 146C. Professional Track Modern Dance III (3)

Lecture/discussion—6 hours. Prerequisite: courses 40B, 146A, and 146B; consent of instructor. Continuation of course 146B. Time as a theatrical device, sustaining movement and non-movement, phrasing, musicality. May be repeated two times for credit.—III. (III.) Grenke

(new course—eff. spring 05)

##### 151S. Australian Performance and Culture (4)

Lecture/discussion—2 hours; seminar—2 hours. Australian performance and theatre practices as a product of its culture of origin. Relationships between art and society. Taught in Australia. GE credit: ArtHum—III. (III.) McCutcheon

(change in existing course—eff. spring 06)

##### 155B. Ancient and Contemporary Greek Theatre and Dance (6)

Discussion/laboratory—10 hours; performance instruction—10 hours; seminar—13 hours. Origins of early theatres and the first actors, playwrights and dancers and their powerful influence on western performance and thought up to present day. Offered in Greece. GE credit: ArtHum.—V, VII. (V, VII.) Shannon

(new course—eff. summer session I 05)

##### 156D. Theatre History through Shakespeare (4)

Lecture—4 hours; writing. Shakespeare's plays, theatre history, and theatre today. European contexts from 1590-2004 and international theatre from 20th century. Stagecraft, different media (print, stage, film), social/political environments, design, and cultural change (gender, sexuality and ethnicity). May be repeated one time for four units of credit. GE Credit: ArtHum, Div., Wri.—II, V. (II, V.). Hunter

(new course—eff. spring 05)

##### 158. Performance Studies Undergraduate Seminar (4)

Seminar—4 hours. Prerequisite: course 156A, B, or C, or consent of instructor. Focused inquiry into a particular genre, period, movement, artist, or theme in performance. Philosophical and aesthetic issues as well as historical and cultural performance contexts. In-depth research projects in relationship to the subject of inquiry. May be repeated for credit. GE Credit: Wri.—I, II, III, IV, V, VII.

(new course—eff. spring 05)

##### 159. Contemporary Experimental Performance, Theatre and Drama (4)

Lecture/discussion—4 hours. Evaluation and examination of the “New Theatre” — its experimental and innovative nature since the 1960s. Dance, film, stage, performance art and public acts of a performative nature. Not open for credit to students who have completed course 159S.—III. (III.) McCutcheon

(change in existing course—eff. spring 05)

##### 159S. Contemporary Experimental Performance, Theatre and Drama (4)

Lecture/discussion—4 hours. Evaluation and examination of the “New Theatre” — its experimental and innovative nature since the 1960s. Dance, film, stage, performance art and public acts of a performative nature. This course is offered in Sydney, Australia. Not open for credit to students who have completed course 159. Not offered every year.—McCutcheon

(change in existing course—eff. spring 05)

##### 192. Internships in Theatre and Dance (1-12)

Internship—3-36 hours. Theatre production experience in creative, technical or management areas. Experience in galleries, performance sites, or theatre/dance/physical theatre companies. May be repeated for credit for a total of 12 units. Not open to students who have completed course 192S. (P/NP grading only.)

(change in existing course—eff. fall 04)

**192S. Internships in Theatre and Dance (1-12)**

Internship—3-36 hours. Theatre production experience in creative, technical or management areas. Experience in galleries, performance sites, or theatre/dance/physical theatre companies. This course is offered in Sydney, Australia. May be repeated for credit for a total of 12 units. Not open to students who have completed course 192. Not offered every year. (P/NP grading only.)—McCutcheon

(new course—eff. spring 05)

**Graduate Courses****224A. Seminar in Theatrical Design: Ancient Worlds—Early 17th Century (4)**

Seminar—2 hours; project—2 hours. Prerequisite: graduate standing. Group study while 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.—I. (I.) Iacovelli, Morgan, Munn

(new course—eff. fall 05)

**224B. Seminar in Theatrical Design: Mid 17th Century to 1900 (4)**

Seminar—2 hours; project—2 hours. Prerequisite: graduate standing; course 224A or 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.—II. (II.) Iacovelli, Morgan, Munn

(new course—eff. winter 06)

**224C. Seminar in Theatrical Design: the 20th Century (4)**

Seminar—2 hours; project—2 hours. Prerequisite: graduate standing; course 224A and 224B or 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.—III. (III.) Iacovelli, Munn

(new course—eff. spring 06)

**224D. Seminar in Theatrical Design: Contemporary Concepts (4)**

Seminar—2 hours; project—2 hours. Prerequisite: graduate standing; course 224A, 224B, and 224C or 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.—I. (I.) Iacovelli, Morgan, Munn

(new course—eff. fall 05)

**224E. Seminar in Theatrical Design: Advanced Concepts (4)**

Seminar—2 hours; project—2 hours. Prerequisite: graduate standing; courses 224A, 224B, 224C, and 224D or 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.—II. (II.) Iacovelli, Morgan, Munn

(new course—eff. spring 06)

**225. Performance Design Studio: Techniques and Media (2)**

Studio—2 hours. Prerequisite: graduate standing; must be taken concurrently with course 224 series. Exploration and development of techniques and skills in the performance design process. Drafting, model building, drawing, painting and rendering, costume drawing, color theory, lighting techniques, design portfolio preparation and presentation. May be repeated up to five times for credit.—I, II, III. (I, II, III.) Iacovelli, Morgan, Munn

(new course—eff. fall 05)

## East Asian Studies

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### New and changed courses in East Asian Studies (EAS)

#### Upper Division Courses

##### **190. East Asian Studies Seminar (4)**

Seminar—3 hours; term paper. Prerequisite: upper division standing or consent of instructor. Political, social, cultural, and economic issues in East Asia. Topic varies each year. May be repeated for credit if topic differs. Not offered every year.

(new course—eff. summer II 04)

# Economics

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## New and changed courses in Economics (ECN)

### Graduate Courses

#### **204. Microeconomic Analysis (5)**

(cancelled course—eff. fall 05)

#### **209A. Economics of Distributive Justice (4)**

(cancelled course—eff. fall 04)

#### **209B. Public Ownership Economics (4)**

(cancelled course—eff. fall 04)

#### **209C. Foundations of Decision Theory (4)**

(cancelled course—eff. fall 04)

#### **239. Econometric Foundations (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: one course in undergraduate-level econometrics. The course will prepare students for econometric theory and empirical work by examining the statistical foundation of econometrics. Special attention is paid to problems specific to non-experimental data common to social sciences. Topics from matrix algebra are also covered. (Same course as Agricultural & Resource Economics 239.)—I. (I.) Green

(new course—eff. fall 04)

#### **240C. Time Series Econometrics (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Probability theory; estimation, inference and forecasting of time series models; trends 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.)—II. (II.) Jorda

(change in existing course—eff. winter 05)

#### **240D. Cross Section Econometrics (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 240B. Estimation and inference for nonlinear regression models for cross-section data; models for discrete data and for limited dependent variables; models for panel data; additional topics such as bootstrap and semiparametric regression. (Same course as Agricultural and Resource Economics 240D)—I. (I.) Cameron

(change in existing course—eff. fall 04)

## Economy, Justice & Society

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### **New and changed courses in Economy, Justice & Society (EJS)**

#### **Upper Division Courses**

**100. Microeconomic Theory (4)**

(cancelled course—eff. summer session I 05)

**117. Economic and Social Inequality (4)**

(cancelled course—eff. fall 04)

#### **Graduate Courses**

**207. Interdisciplinary Social Analysis (3)**

(cancelled course—eff. fall 04)

**209A. Economic Models of Distributive Justice (4)**

(cancelled course—eff. fall 04)

**209B. Economic Models of Public Ownership (4)**

(cancelled course—eff. fall 04)

**209C. Foundations of Decision Theory (4)**

(cancelled course—eff. fall 04)



## Engineering, College of

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### **Changes in English Composition Requirement**

#### **(Upper Division)**

After completing 70 quarter units, you may elect to satisfy the upper division English Composition requirement by passing the English Composition Examination administered by the College of Letters and Science. (You should take it early in your junior year and must take it before your last quarter. Units of credit are not given for passing this examination.)

The English Composition Examination is typically offered on Saturday mornings in mid-October, late January and late April. See the Class Schedule and Registration Guide for specific dates. Sign-up rosters will be posted on the bulletin board near the main English Department office (114 Voorhies), Monday until Friday at noon (or until they are filled) just preceding each Saturday examination date. You must sign up, in person, by noon on Friday. You must obtain the English Composition Examination form, available at the UC Davis Bookstore, to take the exam.

Or, upon completion of 90 quarter units, you may satisfy this requirement by completing University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, or 104F with a grade of C- or higher. Students in Computer Science Engineering must complete the upper division composition requirement by taking University Writing Program 101 or by passing the English composition requirement.

This requirement is in addition to the expository writing course requirement (English 3; Comparative Literature 1, 2, 3 or 4; Native American Studies 5; or University Writing Program 1) specified in the Lower Division Programs.

# Engineering

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## New and changed courses in Engineering (ENG)

### Lower Division Courses

#### 35. Statics (3)

Laboratory—3 hours; lecture—2 hours. Prerequisite: Physics 9A; Mathematics 21D (may be taken concurrently); Civil and Environmental Engineering 19 or Engineering 6 recommended. Force systems and equilibrium conditions with emphasis on engineering problems.—I, II, III. (I, II, III.)

(change in existing course—eff. fall 05)

# Engineering: Aeronautical Science

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## **New and changed courses in Engineering: Aeronautical Science (EAE)**

### **Upper Division Courses**

#### **131. Flight Test Engineering (4)**

(cancelled course—eff. fall 05)

## Engineering: Applied Science

### Changes in Lower Division Required Courses for Computational Applied Science (EAD) Major

|  | UNITS     |
|--|-----------|
| Applied Science Engineering 2.....   | 4         |
| Mathematics 21A-21B-21C-21D.....   | 16        |
| Mathematics 22A-22AL-22B.....  | 7         |
| Physics 9A-9B-9C-9D.....   | 19        |
| Chemistry 2A.....  | 5         |
| Engineering 17.....  | 4         |
| Computer Science Engineering 30 and 40.....  | 8         |
| Computer Science Engineering 20 or 50 or Electrical Engineering 70.....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5, or University Writing Program 1..... | 4         |
| Communication 1 or 3.....  | 4         |
| General Education electives.....   | 12        |
| Unrestricted electives.....  | 3         |
| <b>Minimum Lower Division Units.....</b>   | <b>90</b> |

### Upper Division Required Courses

|   |            |
|---|------------|
| Applied Science Engineering 115, 116, 117A, 117B, 117C, 118, 119..... | 31         |
| Statistics 131A or Civil Engineering 114 or Mathematics 131.....      | 4          |
| Physics 104A.....   | 4          |
| Civil Engineering 119A, 119B.....                                     | 8          |
| Computational Applied Science electives*.....                         | 28         |
| Applied Science Engineering 137 or Engineering 190.....               | 3          |
| General Education electives.....                                      | 12         |
| <b>Minimum Upper Division Units.....</b>                              | <b>90</b>  |
| <b>Minimum Units Required for Major.....</b>                          | <b>180</b> |

### Changes in Lower Division Required Courses for The Optical Science and Engineering Major Program

#### Lower Division Required Courses

|  | UNITS     |
|--|-----------|
| Applied Science Engineering 1.....   | 4         |
| Mathematics 21A-21B-21C-21D.....   | 16        |
| Mathematics 22A-22B.....   | 6         |
| Physics 9A-9B-9C-9D.....   | 19        |
| Chemistry 2A.....  | 5         |
| Engineering 6 or Computer Science Engineering 30.....  | 4         |
| Engineering 17.....  | 4         |
| Engineering 45.....  | 4         |
| English 3 or Comparative Literature 1, 2, 3, or 4 or Native American Studies 5, or University Writing Program 1..... | 4         |
| Communication 1 or 3.....  | 4         |
| General Education electives.....   | 16        |
| <b>Total Lower Division Units.....</b>   | <b>86</b> |

#### Upper Division Required Courses

|  |    |
|--|----|
| Applied Science Engineering 108A, 108B, 115, 161, 165, 166, and 169..... | 28 |
| Electrical and Computer Engineering 130A, 130B, and 13511                |    |
| Physics 104A.....  | 4  |
| Physics 112 or Chemistry 110C.....                                       | 4  |
| Chemistry 110A.....  | 4  |
| Applied Science Engineering 137 or Engineering 190.....                  | 3  |

|  |    |
|--|----|
| Optics electives.....  | 20 |
| 20 units from the following: Applied Science Engineering 116, 167, 170, 172; Biological Sciences 102; Chemistry 110B; Electrical and Computer Engineering 100, 106, 133, 136, 140A, 140B, 150A, 150B |    |

|                                  |    |
|----------------------------------|----|
| Technical electives.....         | 12 |
| General Education electives..... | 8  |

**Minimum Upper Division Units..... 94**

**Minimum Units Required for Major..... 180**

### New and changed courses in Engineering: Applied Science (EAD)

#### Lower Division Courses

##### 1. Optical Science and Engineering (4)

Lecture—3 hours; discussion—1 hour. Discussion and demonstrations of optical science and engineering principles and applications. Discussion of the opportunities and professional practice in the field including ethics and responsibilities.—I. (I.) Baldis, Cramer, Orel (change in existing course—eff. fall 05)

#### Upper Division Courses

**137. Science and Technology of Nuclear Arms Effects and Control (4)**  
(cancelled course—eff. fall 06)

##### 166. Lasers and Nonlinear Optics (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 165. Theory of simple optical processes, population inversion, stimulated emission, laser threshold conditions, line broadening mechanisms, saturation, coherence, laser resonator optics, Q-switching, mode locking, harmonic and sum-frequency generation, parametric conversion, stimulated scattering processes, four-wave mixing, phase conjugation, frequency chirping, ultrashort pulse generation.—I. (I.) Yeh, Krol, Orel

(change in existing course—eff. spring 05)

##### 171. Scanning Probe Microscopy (4)

(cancelled course—eff. spring 05)

#### Graduate Courses

##### 205A. Mathematical Methods (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Mathematics 22B or equivalent. Complex variables, theory of convergence, evaluation of definite integrals, factorial function (gamma function), solution of second-order ODEs, Fourier analysis.—I. (I.) Jensen, Miller, Orel, Rodrigue

(change in existing course—eff. fall 05)

##### 205B. Mathematical Methods (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 205A. Laplace transforms, Fourier transforms, Sturm-Liouville theory, solution of ODEs and PDEs, Green's functions.—II. (II.) Jensen, Miller, Orel, Rodrigue

(change in existing course—eff. winter 06)

**210A. Numerical Methods in Applied Science (4)**

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: facility with a programming language; C or C++ strongly recommended. Numerical methods developed from an applied mathematics perspective: Analysis and control of numerical error, interpolation, integration, noniterative solution of linear systems, iterative methods for root finding and minimization.—II. (II.) Jensen, Miller, Rodrigue  
(change in existing course—eff. winter 06)

**210B. Numerical Methods in Applied Science (4)**

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: facility with a programming language; C or C++ strongly recommended. Numerical methods developed from an applied mathematics perspective: Iterative methods for linear systems, numerical solutions for ODE initial and boundary value problems, numerical PDEs, eigenvalues and eigenvectors.—III. (III.) Rodrigue, Miller, Jensen  
(change in existing course—eff. spring 06)

**213A. Computer Graphics (3)**

(cancelled course—eff. winter 06)

# Engineering: Biological Systems

## Changes in Lower Division Required Courses for Biological Systems Engineering Major

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-(22AL*)-22B .....   | 6 or 7    |
| Physics 9A-9B-9C.....   | 15        |
| Chemistry 2A-2B.....  | 10        |
| Chemistry 8A or 118A .....  | 2 or 4    |
| Biological Sciences 1A .....  | 5         |
| Biological Systems Engineering 1.....   | 5         |
| Engineering 6 or Computer Science Engineering 30* .....   | 4         |
| Engineering 17 .....  | 4         |
| Engineering 35 .....  | 3         |
| Biological Systems Engineering 75.....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4         |
| Communication 1 or 3.....   | 4         |
| General Education electives.....  | 12        |
| <b>Minimum Lower Division Units .....</b>   | <b>94</b> |

\* Mathematics 22AL is required concurrently with Mathematics 22A if you opt to take Computer Science Engineering 30 rather than Engineering 6.

## New and changed courses in Engineering: Biological Systems (EBS)

### Lower Division Courses

#### 103. Fluid Mechanics Fundamentals (4)

Lecture—4 hours. Prerequisite: Physics 9B. Fluid mechanics axioms, fluid statics, kinematics, velocity fields for one-dimensional incompressible flow and boundary layers, turbulent flow time averaging, potential flow, dimensional analysis, and macroscopic balances to solve a range of practical problems. (Same course as Hydrologic Science 103N.)—I. (I.) Wallender

(new course—eff. spring 05)

# Engineering: Biomedical

## Changes in Lower Division Required Courses for Biomedical Engineering Major Program

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D .....   | 19        |
| Chemistry 2A-2B-2C, 8A-8B or 118A-118B-118C* .....  | 21        |
| Engineering 6, 17, 35 .....   | 11        |
| English 3, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5, or University Writing Program 1 ..... | 4         |
| Communication 1 or 3 .....  | 4         |
| Biological Sciences 1A .....  | 5         |
| Biomedical Engineering 1 .....  | 1         |
| General Education electives .....   | 8         |
| <b>Minimum Lower Division Units .....</b>   | <b>95</b> |

\* May not count in lower-division program and towards Engineering and Physical Science electives

## New and changed courses in Engineering: Biomedical (BIM)

### Upper Division Courses

#### 103. Fluid Mechanics Fundamentals (4)

Lecture—4 hours. Prerequisite: Physics 9B. Fluid mechanics axioms, fluid statics, kinematics, velocity fields for one-dimensional incompressible flow and boundary layers, turbulent flow time averaging, potential flow, dimensional analysis, and macroscopic balances to solve a range of practical problems. (Same course as Hydrologic Science 103N.)—I. (I.) Wallender

(new course—eff. spring 05)

#### 106. Biotransport Phenomena (4)

Lecture—4 hours. Prerequisite: Neurobiology, Physiology, and Behavior 101 or equivalent, Physics 9B, Mathematics 22B. Principles of heat and mass transfer with applications to biomedical systems; emphasis on mass transfer across cell membranes and the design and analysis of artificial human organs, and basic fluid transport.—II. (II.)

(change in existing course—eff. winter 05)

#### 108. Biomedical Signals and Control (4)

Lecture—4 hours. Prerequisite: Mathematics 22B; Engineering 100 (may be taken concurrently). Restricted to upper division Engineering students. Systems and control theory applied to biomedical engineering problems. Time-domain and frequency-domain analyses of signals and systems, convolution, Laplace and Fourier transforms, transfer function, dynamic behavior of first and second order processes, and design of feedback control systems for biomedical applications. No credit for students who have taken Electrical and Computer Engineering 150A; 2 units of credit for students who have taken Mechanical Engineering 171.—II. Qi

(change in existing course—eff. winter 06)

#### 109. Biomaterials (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 106. Mechanical and chemical properties of metallic, ceramic, and polymeric implant materials. Properties of bones, joints, and blood vessels. Cellular response to implants, including inflammation, blood coagulation, and wound and fracture healing. Biocompatibility of orthopaedic and cardiovascular materials.—III. (III.) Revzin

(change in existing course—eff. winter 05)

#### 110. Capstone Biomedical Engineering Design (4)

(cancelled course—eff. fall 05)

#### 110A-110B. Capstone Biomedical Engineering Design (2-2)

Laboratory—3 hours; lecture/discussion—1 hour. Prerequisite: courses 107, 108, 109. Application of bioengineering theory and experimental analysis culminating in the design of a unique solution to a problem. The design may be geared towards current applications in applied biomechanics, biotechnology or medical technology. (Deferred grading only, pending completion of sequence.)—II, III. (II, III.)

(new courses—eff. fall 05)

#### 116. Physiology for Biomedical Engineers (5)

Lecture/discussion—3 hours; lecture—2 hours. Prerequisite: Biological Sciences 1A, Mathematics 22B. Basic human physiology for the nervous, muscular, cardiovascular, respiratory, gastrointestinal, renal, endocrine and reproductive systems. Emphasis on the physical and engineering principles governing these systems, including transport processes and the application of biomedical engineering-based diagnostics and therapeutics to disease. Only 3 units of credits if taken after Neurobiology, Physiology, and Behavior 101.—I. (I.) Louie

(new course—eff. spring 05)

#### 117. Analysis of Molecular and Cellular Networks (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 1A and Mathematics 22B. Network themes in biology, emphasizing metabolic, genetic, and developmental networks. Mathematical and computational methods for analysis of such networks. Elucidation of design principles in natural networks. Engineering and ethical issues in the design of synthetic networks.—III. (III.) Savageau

(new course—eff. spring 05)

#### 142. Biomedical Imaging: Basic Principles and Practice (4)

Lecture—3 hours; term paper. Prerequisite: Physics 9D and Mathematics 22B. Basic physics, engineering principles, and applications of biomedical imaging techniques including x-ray imaging, computed tomography, magnetic resonance imaging, ultrasound and nuclear imaging.—I. (I.) Cherry

(new course—eff. spring 03)

#### 161A. Biomolecular Engineering (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 1A, Chemistry 8B; upper division standing. Introduction to the basic concepts and techniques of biomolecular engineering such as recombinant DNA technology, protein engineering, and molecular diagnostics.—II. (II.) Yokobayashi

(new course—eff. winter 06)

#### 189A-C. Topics in Biomedical Engineering (1-5)

Prerequisite: consent of instructor. Topics in Biomedical Engineering. (A) Cellular and Molecular Engineering (B) Biomedical Imaging (C) Biomedical Engineering. May be repeated if topic differs. Not offered every year.

(new course—eff. fall 04)

**190A. Upper Division Seminar in Biomedical Engineering (1)**

Seminar—1 hour. Prerequisite: 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. (P/NP grading only.)—III. (III.) Louie

(new course—eff. spring 06)

**198. Directed Group Study (1-5)**

Prerequisite: consent of instructor. May be repeated up to three times for credit. (P/NP grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**Graduate Courses**

**209. Scientific Integrity for Biomedical Engineers (2)**

Lecture —1 hour; discussion—1 hour. Scientific integrity and ethics for biomedical engineers, with emphasis and discussion on mentoring, authorship and peer review, use of humans and animals in biomedical research, conflict of interest, intellectual property, genetic technology and scientific record keeping. Biomedical Engineering majors only. (S/U grading only.)—III.

(new course—eff. spring 06)

**242. Introduction to Biomedical Imaging (4)**

Lecture—4 hours. Prerequisite: Physics 9D and Electrical and Computer Engineering 106 or consent of instructor. Basic physics and engineering principles of image science. Emphasis on ionizing and nonionizing radiation production and interactions with the body and detectors. Major imaging systems: radiography, computed tomography, magnetic resonance, ultrasound, and optical microscopy.—I. (I.) Insana, Boone, Seibert

(change in existing course—eff. fall 04)

**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 autoradiography, gamma camera imaging, single photon emission computed tomography, positron emission tomography and applications of these techniques in biology and medicine.—III. (III.) Cherry

(change in existing course—eff. spring 05)



## Engineering: Chemical

### Changes in Lower Division Required Courses for Chemical Engineering/Materials Science and Engineering Major

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C.....   | 15        |
| Chemistry 2A, 2B, 2C or Chemistry 2AH, 2BH, 2CH.....  | 15        |
| Chemistry 128A, 128B, 129A.....   | 8         |
| Chemical Engineering and Materials Science 5, 6 .....   | 6         |
| Chemical Engineering 51.....  | 4         |
| Chemical Engineering 80.....  | 1         |
| Engineering 45.....   | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4         |
| General Education electives.....  | 12        |
| <b>Total Lower Division Units.....</b>  | <b>91</b> |

#### Upper Division Required Courses

|  |    |
|--|----|
| Chemical Engineering 140, 141, 142, 143, 146, 152A, 152B,<br>155A, 155B, 157, 158A, 158B, 158C .....   | 52 |
| Chemistry 110A, 110B .....   | 8  |
| Biological Sciences 102 .....  | 3  |
| Statistics 100 .....   | 4  |
| Materials Science and Engineering 160, 162, 162L, 164, and<br>two courses chosen from Materials Science and Engineer-<br>ing 147, 172, 174, 180, 181, 182, 188A-188B (if Material<br>Science and Engineering 147 is taken, then either Material<br>Science and Engineering 172L or 174L must also be taken<br>in order to obtain the minimum unit requirement) ..... | 22 |
| General Education electives.....   | 12 |

**Minimum Upper Division Units ..... 101**

**Minimum Units Required for Major ..... 192**

### Changes in Lower Division Required Courses for Biochemical Engineering Major

|   | UNITS |
|---|-------|
| Mathematics 21A-21B-21C-21D .....   | 16    |
| Mathematics 22A-22B .....   | 6     |
| Physics 9A-9B-9C.....   | 15    |
| Chemistry 2A, 2B, 2C or Chemistry 2AH, 2BH, 2CH.....  | 15    |
| Chemistry 128A, 128B, 129A.....   | 8     |
| Biological Sciences 1A.....   | 5     |
| Chemical Engineering and Materials Science 5, 6 .....   | 6     |
| Chemical Engineering 51.....  | 4     |
| Chemical Engineering 80.....  | 1     |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4     |
| General Education electives.....  | 12    |
| <b>Minimum Lower Division Units ..... 92</b>  |       |

### Changes in Lower Division Required Courses for Materials Science and Engineering Major

|   | UNITS |
|---|-------|
| Mathematics 21A-21B-21C-21D .....   | 16    |
| Mathematics 22A-22B .....   | 6     |
| Physics 9A-9B-9C-9D.....  | 19    |
| Chemistry 2A, 2B or 2AH, 2BH .....  | 10    |
| Engineering 6, 17, 35, 45 .....   | 15    |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4     |
| Communication 1 or 3.....   | 4     |
| General Education electives.....  | 16    |
| <b>Minimum Lower Division Units ..... 90</b>  |       |

### New and changed courses in Engineering: Chemical (ECH)

#### Upper Division Courses

##### 160. Fundamentals of Biomanufacturing (3)

Lecture—3 hours. Prerequisite: Microbiology 102, Biological Sciences 102 or Animal Biology 102. Principles of large scale bio-reactor pro-duction of metabolites, enzymes, and recombinant proteins including the development of strains/cell lines, fermentor/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.— McDonald

(new course—eff. winter 05)

## Engineering: Chemical and Material Science

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### New and changed courses in Engineering: Chemical and Material Science (ECM)

#### Graduate Courses

##### **261. Molecular Modelling of Soft and Biological Matter (4)**

Lecture/discussion—4 hours. Prerequisite: Materials Science and Engineering 247 or Engineering: Chemical 252 or equivalent course in advanced thermodynamics/statistical mechanics. Modern molecular simulation techniques with a focus on soft matter like polymers, biologically relevant systems, and glasses. Offered in alternate years.—II. Faller

(new course—eff. winter 06)

##### **280. Seminar in Ethics for Scientists (2)**

Seminar—2 hours. Prerequisite: 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 Chemistry 280 and Physics 280.) (S/U grading only.)—III. (III.)

(new course—eff. spring 05)

## Engineering: Civil and Environmental

### Changes in Civil Engineering/Materials Science and Engineering Major

The Civil Engineering/Materials Science and Engineering major has been cancelled, effective fall 05. The major will be continued until all current majors have graduated or change to another major.

### Changes in Lower Division Required Courses for Civil Engineering Major

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C and choice of Physics 9D, Chemistry 2C,<br>Biological Science 1A or Geology 50-50L* .....  | 19        |
| Chemistry 2A-2B or 2AH-2BH .....  | 10        |
| Civil and Environmental Engineering 3 .....   | 3         |
| (Civil and Environmental Engineering 3 is designed for freshman students and is not open to upper division students. Students who do not take this course will substitute 3 units of additional upper division civil engineering coursework as technical elective units.) |           |
| Engineering 6, 17, 35, 45 .....   | 15        |
| Civil and Environmental Engineering 10 .....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 .....   | 4         |
| Communication 1 or 3 .....  | 4         |
| General Education electives .....   | 12        |
| <b>Minimum Lower Division Units .....</b>   | <b>93</b> |

### New and changed courses in Engineering: Civil and Environmental (ECI)

#### Lower Division Courses

##### 10. Introduction to Surveying (4)

Laboratory—6 hours; lecture—2 hours. Prerequisite: Physics 9A (may be taken concurrently). Theory and practice of civil engineering surveying. Modern methods of land surveying and computer-aided design and geographic information systems in civil engineering practice. Only 3 units of credit for students who have previously taken Biological Systems Engineering 1.—III. (III.) Chang

(change in existing course—eff. spring 06)

##### 19C. Programming for Civil and Environmental Engineers (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: Mathematics 22A (may be taken concurrently). Computational problem solving techniques for civil and environmental engineering applications using structured C programming. Algorithm design applied to realistic problems. Not open for credit to students who have completed course 119A.—II. (II.) Jeremic, Kleeman

(new course—eff. winter 05)

#### Upper Division Courses

##### 119. Parallel Processing for Engineering Applications (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: C programming or consent of instructor. Fundamental skills in parallel computing for engineering applications; emphasis on structured parallel programming for distributed memory parallel clusters. Not open for credit to students who have completed course 119B.—III. (III.) Kleeman, Jeremic

(new course—eff. spring 05)

##### 119A. C/FORTRAN Programming for Engineers (4)

(cancelled course—eff. winter 05)

##### 119B. Parallel Processing for Engineering Applications (4)

(cancelled course—eff. spring 05)

##### 134. Analysis and Design of Bridges (4)

(cancelled course—eff. winter 06)

##### 143. Green Engineering Design and Sustainability (4)

Lecture—4 hours. Prerequisite: upper division standing; restricted to Civil Engineering and Civil Engineering/Materials Science and Engineering majors only. Application of concepts, goals, and metrics of sustainability, green engineering, and industrial ecology to the design of engineered systems. Life-cycle analyses, waste audit and environmental management systems, economics of pollution prevention and sustainability, and substitute materials for products and processes.—I. (I.) Loge

(new course—eff. fall 05)

##### 144. Groundwater Systems Design (4)

Lecture—4 hours. Prerequisite: course 141. Groundwater occurrence, distribution, and movement; groundwater flow systems; radial flow to wells and aquifer testing; aquifer management; groundwater contamination; solute transport by groundwater; fate and transport of subsurface contaminants. Groundwater supply and transport modeling.—I. (I.) Ginn

(change in existing course—eff. spring 05)

##### 147. Solid Waste Management (3)

(cancelled course—eff. fall 05)

##### 148B. Water Quality Management Systems Design (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: course 148A. Application of the principles of fluid mechanics to the analysis and design of flow measuring devices, pumps and pump station design, water distribution systems, wastewater collection systems, water and wastewater treatment plant headloss analysis, and bioremediation systems.—III. (III.) Darby

(change in existing course—eff. fall 05)

##### 153. Deterministic Optimization and Design (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: Mathematics 21C, 22A, computer programming course; Applied Science Engineering 115 recommended. Operations research. Optimization techniques such as linear programming, dynamic programming, and non-linear programming. Applications in water, transportation, environmental, infrastructure systems, and other civil engineering disciplines through computer-based course projects.—I, II. (I, II.) Fan

(change in existing course—eff. fall 06)

##### 166. Scientific Data Management (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: programming skills at course level 40; Mathematics 21C. Relational databases, SQL, non-standard databases, XML, scientific workflows, interoperability, data analysis tools, metadata.—I. (I.) Gertz, Ludaescher

(new course—eff. fall 05)

## Graduate Courses

### 206. Fracture Mechanics (4)

Lecture—4 hours. Prerequisite: course 201; Engineering 104. Linear and nonlinear fracture mechanics, stress analysis, energy concepts, brittle fracture criteria, path independent integrals, Dugdale-Barenblatt model, general cohesive zone models, ductile fracture criteria, crack tip fields for stationary and propagating cracks, fatigue. Application of numerical methods for fracture mechanics.—II. (II.) Sukumar

(change in existing course—eff. winter 06)

### 249. Probabilistic Design and Optimization (4)

Lecture—4 hours. Prerequisite: courses 114 and 153 and Engineering 106, or equivalents. Design by optimization for probabilistic systems, decision theory, the value of information, probabilistic linear programming, probabilistic dynamic programming, nonlinear probabilistic optimization. Applications in civil engineering design, project evaluation, and risk management. Offered in alternate years.—(II). Lund

(change in existing course—eff. winter 06)

### 250. Civil Infrastructure System Optimization and Identification (4)

Lecture—4 hours. Prerequisite: Mathematics 21C, 22A, programming course; Applied Science Engineering 115 and mathematical modeling course recommended. Applied mathematics with a focus on modeling, identifying, and controlling dynamic, stochastic, and underdetermined systems. Applications in transportation networks, water resource planning, and other civil infrastructure systems. Offered in alternate years.—III. Fan

(new course—eff. spring 05)

### 253. Dynamic Programming and Multistage Decision Processes (4)

Lecture—4 hours. Prerequisite: Mathematics 21C, 22A, programming course; Applied Science Engineering 115 recommended. Operations research. Optimization techniques with a focus on dynamic programming in treating deterministic, stochastic, and adaptive multistage decision processes. Brief review of linear programming and non-linear programming. Applications in transportation networks and other civil infrastructure systems.—III. (III.) Fan

(new course—eff. spring 05)

### 259. Asphalt and Asphalt Mixes (4)

Lecture—4 hours. Prerequisite: course 179 or consent of instructor. Asphalts and asphalt mix types and their use in civil engineering structures, with primary emphasis on pavements. Asphalt, aggregate properties and effects on mix properties. Design, construction, recycling. Recent developments and research. Offered in alternate years.—(II). Harvey

(new course—eff. winter 06)

### 260. Sediment Transport (4)

Lecture—4 hours. Prerequisite: course 141 or equivalent. Sediment transport in hydrologic systems. Process-oriented course which will emphasize how sediment moves and the physical processes that affect sediment transport. Field trip. Offered in alternate years.—(I.) Schoellhamer

(change in existing course —eff. winter 06)

### 261. Cohesive Particle Transportation (3)

(cancelled course—eff. winter 06)

# Engineering: Computer Science

## Changes in Lower and Upper Division Required Courses for Computer Science and Engineering Major

The Computer Science and Engineering program is accredited by the Engineering Accreditation Commission and the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology.

### Lower Division Required Courses

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D.....  | 19        |
| Chemistry 2A .....  | 5         |
| Computer Science Engineering 20, 30, 40.....  | 12        |
| Computer Science Engineering 50 or Electrical and<br>Computer Engineering 70 .....  | 4         |
| Engineering 17 .....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4         |
| Communication 1 .....   | 4         |
| General Education electives .....   | 12        |
| Unrestricted electives .....  | 4         |
| <b>Minimum Lower Division Units .....</b>   | <b>90</b> |

### Upper Division Program

|   |           |
|---|-----------|
| Computer Science Engineering 188 or Engineering 190.....  | 3         |
| Electrical and Computer Engineering 100 and 180A .....  | 10        |
| Mathematics 131 or Statistics 131A .....  | 4         |
| Computer Science Engineering 110.....   | 4         |
| Computer Science Engineering 120† or 122A†.....   | 4         |
| Computer Science Engineering 152A, 154A, 154B, and Elec-<br>trical and Computer Engineering 172 .....   | 16        |
| Computer Science Engineering 140A, 150, and 160 .....   | 12        |
| Computer electives—a minimum of 4 courses and a mini-<br>mum of 13 units chosen from Computer Science Engi-<br>neering 120†, 122A†, 122B, 130, 140B, 142, 145, 152B,<br>152C, 153, 158, 163, 165A, 165B, 170, 175, 177, 178; or<br>one course (minimum 3 units from one single course) from<br>approved 192 or 199, or Electrical and Computer Engi-<br>neering 194; Electrical and Computer Engineering 180B<br>13 |           |
| General Education electives.....  | 21        |
| Unrestricted elective.....  | 3         |
| <b>Minimum Upper Division Units .....</b>   | <b>90</b> |

### Minimum Units Required for Major ..... 180

† Completion of both Computer Science Engineering 120 and 122A will satisfy the computer science theory requirement and a computer elective requirement.

## New and changed courses in Engineering: Computer Science (ECS)

### Upper Division Courses

#### 123. Urban Systems and Sustainability (4)

Lecture—4 hours. Prerequisite: upper division standing. Systems-level approach of how to evaluate and then modify sustainability of urban systems based on interaction with natural environments. Topics include: definition/metrics of urban sustainability; system analyses of urban systems; enabling technology, policies, legislation; measures and modification of ecological footprints. GE Credit: SciEng, SocSci, Div, Wri.—I. (I.) Loge, Niemeier  
(new course—eff. fall 06)

#### 129. Computational Structural Bioinformatics (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: college level programming course; Biological Science 1A or Molecular and Cellular Biology 10. Fundamental biological, chemical and algorithmic models underlying computational structural biology; protein structure and nucleic acids structure; comparison of protein structures; protein structure prediction; molecular simulations; databases and online services in computational structural biology.—I. (I.) Koehl  
(new course—eff. fall 06)

#### 145. Scripting Languages and Their Applications (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 110. Goals and philosophy of scripting languages, with Perl and Python as prime examples. Applications include networking, threaded programming, and graphical user interfaces (GUIs). Offered in alternate years.—III. Matloff  
(new course—eff. spring 05)

#### 152A. Computer Networks (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 110 or Engineering Electrical and Computer 73; Mathematics 131 or Statistics 131A or Statistics 120 or Statistics 32. Overview of local and wide-area computer networks. ISO seven-layer model. Physical aspects of data transmission. Data-link layer protocols. Network architectures. Routing. TCP/IP protocol suite. Local area networks. Medium access protocols. Network performance analysis. Only 2 units of credit for students who have taken course 157. (Same course as Electrical and Computer Engineering 173A.)—I, II, III. Ghosal, Liu, Mohapatra, Chuah, Matloff, Mukherjee  
(change in existing course—eff. fall 05)

#### 152C. Design Projects in Communication Networks (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 152A or Electrical and Computer Engineering 173A. Advanced topics and design projects in communication networks. Example topics include wireless networks, multimedia networking, network design and management, traffic analysis and modeling, network simulations and performance analysis. Offered in alternate years. (Same course as Electrical and Computer Engineering 173B.)—(III.) Chuah, Liu, van der Schaar, Mukherjee  
(new course—eff. spring 05)

#### 153. Computer Security (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: courses 150 and 152A. Principles, mechanisms, and implementation of computer security and data protection. Policy, encryption and authentication, access control, and integrity models and mechanisms; network security; secure systems; programming and vulnerabilities analysis. Study of an existing operating system. Not open for credit to students who have completed course 155.—II, III. (II, III.) Bishop, Chen  
(change in existing course—eff. winter 06)

**155. Computer Security for Non-Majors (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: programming skill at the level of course 30; Mathematics 21C. Principles, mechanisms, implementation, and sound practices of computer security and data protection. Cryptography. Authentication and access control. Internet security. Malicious software. Common vulnerabilities. Practical security in everyday life. Not open for credit to students who have completed course 153.—I. (I.) Chen, Bishop

(new course—eff. fall 05)

**163. Information Interfaces (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 110; course 175 recommended. Art and science of information visualization and interfaces for information systems. Design principles of human-computer interaction. Visual display and navigation of non-spatial and higher dimensional data. Implementations, performance issues, tradeoffs, and evaluation of interactive information systems.—III. (III.) Ma, Amenta

(change in existing course—eff. spring 05)

**Graduate Courses****226. Computational Geometry (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 175, 222A. Mathematics of unstructured data. Algorithms for data structures such as Voronoi diagrams, oct-trees, and arrangements. Applications in computer graphics, concentrating on problems in three-dimensions. Offered in alternate years.—III. Amenta, Max

(new course—eff. spring 05)

**230. Applied Numerical Linear Algebra (4)**

Laboratory/discussion—3 hours; discussion—1 hour. Prerequisite: course 130 or Engineering Applied Science 209 or Mathematics 167. Numerical linear algebra (NLA) with emphasis on applications in engineered systems; matrix factorizations; perturbation and rounding error analyses of fundamental NLA algorithms. Offered in alternate years.—(I.) Bai, Laub

(change in existing course—eff. spring 05)

**235. Computer and Information Security (4)**

(cancelled course—eff. spring 06)

**251. Operating Systems (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 150. Models, design, implementation, performance evaluation in operating systems. Algorithms, internal architectures for single processor OS and distributed systems. Concurrency control, recovery, security. OS kernel-level programming. Special topics embedded systems, real-time system, device driver, NPU (Network Processor Unit).—III. (III.) Pandey, Wu

(change in existing course—eff. spring 05)

**272. Information Visualization (4)**

Lecture—3 hours; laboratory—3 hours. Prerequisite: course 163 or 175 recommended. Advanced topics in information visualization: perceptually effective display methods, color design and selection, interaction models and techniques, focuscontext techniques, distortion methods, large graph visualization techniques, visual data mining methods, and evaluation methods.—II. (II.) Ma

(new course—eff. winter 06)

**279. Computer Animation (4)**

Lecture—3 hours; laboratory—3 hours. Prerequisite: course 175 or 177 or 178. Control of camera and object motion necessary to produce computer animation, modeling of articulated objects made from jointed segments, and of deformable objects. Students will complete a final animation project. Offered in alternate years. (Same course as Applied Science Engineering 215.)—III. Hamann, Joy, Max, Ma

(change in existing course—eff. spring 06)

## Engineering: Electrical and Computer

### Changes in Lower Division Required Courses for Electrical Engineering Program

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D .....   | 19        |
| Chemistry 2A .....  | 5         |
| Computer Science Engineering 30 .....   | 4         |
| Engineering 6 .....   | 4         |
| Computer Science Engineering 40 or Electrical and Computer Engineering 73 .....   | 4         |
| Electrical and Computer Engineering 1 .....   | 1         |
| Electrical and Computer Engineering 70 or Computer Science Engineering 50 .....   | 4         |
| Engineering 17 .....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5, or University Writing Program 1 ..... | 4         |
| Communication 1 or 3 .....  | 4         |
| General Education electives .....   | 12        |
| Unrestricted electives .....  | 3         |
| <b>Minimum Lower Division Units .....</b>   | <b>90</b> |

### Changes in Recommended Elective Courses for Electrical Engineering Curriculum, Areas of Specialization

*Analog Electronics:* transistor- and system-level analog circuit design.

Recommended elective courses:

Core electives: Electrical and Computer Engineering 140B, 150B  
Design Project Elective: Electrical and Computer Engineering 195A-195B-195C

Senior Design Sequence: Electrical and Computer Engineering 196A, 196B

Design Electives with Lab: at least two from Electrical and Computer Engineering 112, 114, 157A, 165, 195A-195B-195C

Select remaining upper-division design electives from Electrical and Computer Engineering 110B, 118, 132A, 132B, 132C, 151, 157B, 160, 210

Technical electives: Select from Electrical and Computer Engineering 130B, 146A, 194A-194B-194C

*Digital Electronics:* transistor- and system-level digital circuit design.

Recommended elective courses:

Core electives: Electrical and Computer Engineering 140B, 150B  
Design Project Elective: Electrical and Computer Engineering 151 or 183 or 194A-194B-194C or 195A-195B-195C

Senior Design Sequence: Electrical and Computer Engineering 196A, 196B

Design Electives with Lab: Electrical and Computer Engineering 118 and 180B or 151 or 165 or 172 or 183 or 194A-194B-194C or 195A-195B-195C

Select remaining upper-division design electives from Electrical and Computer Engineering 110B, 116, 170 or 171

Technical electives: Select from Electrical and Computer Engineering 130B and 112 or 146A or 157A or 160 or 210

### Changes in Upper Division Required Courses for Electrical Engineering Program

|   |            |
|---|------------|
| Electrical and Computer Engineering 100, 110A, 130A, 140A, 150A, 180A .....   | 26         |
| Statistics 120, 131A, Mathematics 131, or Civil and Environmental Engineering 114 .....   | 4          |
| Engineering 160, 190 or Applied Science Engineering 137 or Computer Science Engineering 188 .....   | 3          |
| Upper-division electives .....  | 28         |
| Chose at least 8 courses for a minimum of 28 units from the following:  |            |
| Two core electives: Electrical and Computer Engineering 110B*, 130B, 140B, 150B, 151*, 157A*, 160*, 170*, 180B*   |            |
| Design electives: At least two design electives with lab: Electrical and Computer Engineering 106, 112, 114, 116, 118, 132A, 132B, 132C, 136, 146A, 146B, 151, 157A, 157B, 165, 172, 180B, 173, 175, 183, 194A-194B-194C (must be taken in consecutive quarters), 195A-195B-195C (must be taken in consecutive quarters), |            |
| At least one design elective with project**: Electrical and Computer Engineering 116, 132B, 135, 151, 157B, 165, 183, 194A-194B-194C, 195A-195B-195C***   |            |
| One senior design sequence: Electrical and Computer Engineering 196A-196B   |            |
| The remaining design electives may be chosen from the lists above or from the following courses: Electrical and Computer Engineering 110B, 133, 158, 160, 166, 167, 170, 171, 173A; Computer Science and Engineering 110, 150, 152B, 163, 175, 177, 178   |            |
| Technical electives .....   | 9          |
| General Education electives .....   | 12         |
| Unrestricted electives .....  | 8          |
| Minimum Upper Division Units .....  | 90         |
| <b>Minimum Units Required for Major .....</b>   | <b>180</b> |

\*A maximum of one course appearing on both the core elective list and the design elective lists may be counted in both categories.

\*\*One course appearing on both the laboratory elective list and the project elective list may be counted toward both the laboratory requirement and the project requirement simultaneously.

\*\*\*After completion of the upper-division elective requirements (eight core and design courses) any units in excess of 28 may be counted toward the technical elective requirement.

**Changes in Lower Division Required Courses for Computer Engineering Program**

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D .....   | 19        |
| Chemistry 2A .....  | 5         |
| Computer Science Engineering 20, 30, 40.....  | 12        |
| Engineering 6 .....   | 4         |
| Electrical and Computer Engineering 1.....  | 1         |
| Electrical and Computer Engineering 70 or Computer Science Engineering 50 .....   | 4         |
| Engineering 17 .....  | 4         |
| English 3, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5, or University Writing Program 1 ..... | 4         |
| Communication 1 or 3.....   | 4         |
| General Education electives.....  | 12        |
| <b>Total Lower Division Units.....</b>  | <b>91</b> |

**Changes in Upper Division Required Courses for Computer Engineering Program**

|  |            |
|--|------------|
| Electrical and Computer Engineering 100, 110A, 140A, 180A, 180B .....  | 23         |
| Electrical and Computer Engineering 170*, 172.....   | 8          |
| Computer Science Engineering 150.....  | 4          |
| Computer Science Engineering 110, 122A .....   | 8          |
| Statistics 120, 131A, Mathematics 131, or Civil and Environmental Engineering 114.....   | 4          |
| Engineering 160, 190, Applied Science Engineering 137, or Computer Science Engineering 188 .....   | 3          |
| Upper-Division Elective Courses: .....   | 11         |
| At least one design elective with project: Electrical and Computer Engineering 116, 132B, 135, 151, 157B, 165, 173, 175, 183, 194-194B-194C, 195A-195B-195C**  |            |
| One senior design sequence: Electrical and Computer Engineering 195A-195B-195C, 196A-196B  |            |
| The remaining design electives may be chosen from the list above or from the following list: Electrical and Computer Engineering 106, 110B, 112, 118, 132A, 132C, 133, 146B, 157A, 160, 166, 167, 171, 173A; Computer Science Engineering 122B, 140A, 140B, 142, 152B, 153, 158, 160, 163, 165A, 165B, 175, 177, 178 |            |
| Technical electives.....   | 9          |
| General Education electives.....   | 12         |
| Unrestricted electives .....   | 7          |
| Minimum Upper Division Units .....   | 89         |
| <b>Minimum Units Required for Major .....</b>  | <b>180</b> |

\* Computer Science Engineering 154B may be substituted for the Electrical and Computer Engineering 170 requirement.

\*\*After completion of the upper-division elective requirements (eight core and design courses) any units in excess of 28 may be counted toward the technical elective requirement.

**Changes in Lower Division Required Courses for Electrical Engineering/Materials Science and Engineering Program**

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D .....   | 19        |
| Chemistry 2A-2B.....  | 10        |
| Computer Science Engineering 30.....  | 4         |
| Engineering 6 .....   | 4         |
| Computer Science Engineering 40 or Electrical and Computer Engineering 73 .....   | 4         |
| Electrical and Computer Engineering 1.....  | 1         |
| Electrical and Computer Engineering 70 or Computer Science Engineering 50 .....   | 4         |
| Engineering 17, 35, 45 .....  | 11        |
| English 3, or Comparative Literature 1, 2, 3, or 4, or Native American Studies 5, or University Writing Program 1 ..... | 4         |
| Communication 1 or 3.....   | 4         |
| General Education electives.....  | 12        |
| <b>Minimum Lower Division Units .....</b>   | <b>99</b> |

**Changes in Upper Division Required Courses for Electrical Engineering/Materials Science and Engineering Program**

|  |            |
|--|------------|
| Electrical and Computer Engineering 100, 110A, 110B, 130A, 130B, 140A, 140B, 150A, 180A .....  | 38         |
| Materials Science and Engineering 160, 162, 164, 172, 17420 Engineering 105 .....  | 4          |
| Statistics 120, 131A, Mathematics 131, or Civil and Environmental Engineering 114.....   | 4          |
| Engineering 160, 190, Applied Science Engineering 137, or Computer Science Engineering 188 .....   | 3          |
| Design electives.....  | 7          |
| Select two courses, one of which must be Materials Science and Engineering 188A-188B. Choose the second course from the following:   |            |
| Electrical and Computer Engineering 106, 112, 114, 118, 132A, 133, 135, 136, 146B, 151, 157A, 160, 166, 170, 172, 180B, 194A-194B-194C (must be taken in consecutive quarters to count as one design elective), 195A-195B-195C (must be taken in consecutive quarters to count as one design elective); Materials Science and Engineering 180, 181, 182. |            |
| Laboratory courses—Materials Science and Engineering 162L or 172L, Electrical and Computer Engineering 146A .....  | 5          |
| General Education electives .....  | 12         |
| Minimum Upper Division Units .....   | 93         |
| <b>Minimum Units Required for Major .....</b>  | <b>192</b> |



## New and changed courses in Engineering: Electrical and Computer (EEC)

### Lower Division Courses

#### 73. Applications of Object-Oriented Programming (4)

(cancelled course—eff. fall 06)

### Upper Division Courses

#### 101. Gateway to Electrical and Computer Engineering (2)

(cancelled course—eff. spring 05)

#### 132B. High Frequency Systems Circuits and Devices (5)

Lecture—3 hours; laboratory—3 hours; discussion—1 hour. Prerequisite: course 132A. Passive high frequency device analysis, design, fabrication, and testing. Microwave filter and coupler design. Introductory analysis and design of microwave transistor amplifiers.—II. (II.) Branner

(change in existing course—eff. winter 05)

#### 132C. RF Amplifiers, Oscillators and Mixers (5)

Lecture—3 hours; laboratory—3 hours; discussion—1 hour. Prerequisite: course 132B. Microwave amplifier theory and design, including transistor circuit models, stability considerations, noise models and low noise design. Theory and design of microwave transistor oscillators and mixers.—III. (III.) Branner

(change in existing course—eff. spring 05)

#### 145A. Solid State Electronics (3)

(cancelled course—eff. fall 06)

#### 145B. Solid-State Electronics (3)

(cancelled course—eff. fall 06)

#### 152. Digital Signal Processing (4)

Lecture—2 hours; laboratory—6 hours. Prerequisite: courses 70 and 150B. Theory and practice of real-time digital signal processing. Fundamentals of real-time systems. Programmable architectures including I/O, memory, peripherals, interrupts, DMA. Interfacing issues with A/D and D/A converters to a programmable DSP. Specification driven design and implementation of simple DSP applications.—III. (III.) Akella, Baas, Redinbo

(new course—eff. spring 06)

#### 173A. Computer Networks (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 73 or Computer Science Engineering 110; Mathematics 131 or Statistics 131A or Statistics 120 or Statistics 32. Overview of local and wide-area computer networks. ISO seven-layer model. Physical aspects of data transmission. Data-link layer protocols. Network architectures. Routing. TCP/IP protocol suite. Local area networks. Medium access protocols. Network performance analysis. Only two units of credit for students who have taken course 157. (Same course as Engineering Computer Science 152A.)—I, II, III. Ghosal, Liu, Mohapatra, Chuah, Matloff, Mukherjee

(change in existing course—eff. fall 05)

#### 173B. Design Projects in Communication Networks (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 173A or Computer Science and Engineering 152A. Advanced topics and design projects in communication networks. Example topics include wireless networks, multimedia networking, network design and management, traffic analysis and modeling, network simulations and performance analysis. Offered in alternate years. (Same course as Computer Science and Engineering 152C.)—(III.) Chuah, Liu, van der Schaar, Mukherjee

(new course—eff. spring 05)

#### 175. Compiler Optimization (5)

Laboratory—9 hours; discussion—1 hour; project—1 hour. Prerequisite: course 170 or Computer Science Engineering 154A; Computer Science Engineering 110. Program analysis and transformation techniques for increasing program performance and reducing code size. Fundamental optimizations including instruction scheduling, register allocation, code motion, common subexpression elimination, dead code elimination, strength reduction and branch alignment.—III. (III.) Wilken

(new course—eff. spring 05)

#### 196A. Senior Design Project (1)

Lecture/discussion—1 hour. Prerequisite: English 101, 102, or 104, or successful completion of English Composition Examination; senior standing in Electrical or Computer Engineering; restricted to the Electrical Engineering or Computer Engineering majors. Integration of principles and capstone design project for Electrical and Computer Engineering. Project incorporates engineering standards and realistic constraints including economic, manufacturability, sustainability, ethical, health and safety, environmental, social, and political. Completion of portfolio of upper division course work. (Deferred grading only, pending completion of sequence.)—I. (I.)

(new course—eff. fall 04)

#### 196B. Senior Design Project (1)

Term paper or discussion—1 hour. Prerequisite: course 196A; any course from department listing of approved project courses; restricted to Electrical Engineering and Computer Engineering majors. Integration of principles and capstone design project for Electrical and Computer Engineering. Project incorporates engineering standards and realistic constraints including economic, manufacturability, sustainability, ethical, health and safety, environmental, social, and political. Completion of portfolio of upper division course work. (Deferred grading only, pending completion of sequence.)—I, II, III. (I, II, III.)

(change in existing course—eff. winter 06)

### Graduate Courses

#### 201. Digital Signal Processing (4)

Lecture—4 hours. Prerequisite: course 150B; Statistics 120 or Mathematics 131 or Mathematics 167 recommended. Theory and design of digital filters. Classification of digital filters, linear phase systems, all-pass functions, FIR and IIR filter design methods and optimality measures, numerically robust structures for digital filters.—II. (II.) Tuqan

(change in existing course—eff. winter 06)

#### 202. Advanced Digital Signal Processing (4)

Lecture—4 hours. Prerequisite: courses 201, 260, and 265, and Mathematics 167 are recommended. Multirate DSP theory and wavelets, optimal transform and subband coders in data compressions, advanced sampling theory and oversampled A/D converters, transmultiplexers and precoders in digital communication systems, genomic signal processing. Offered in alternate years.—(III.) Tuqan

(new course—eff. spring 06)

#### 209. Multimedia Compression and Processing (4)

Lecture—3 hours; project—2 hours. Prerequisite: knowledge of a programming language (Matlab, C, or C++); Statistics 120, 131A, Engineering Civil & Environmental 114, or Mathematics 131, or equivalent; course 106 or 206 recommended. Principles and practices of state-of-the-art multimedia compression and processing. State-of-the-art multimedia coding standards; scalable multimedia coding; new paradigms in wavelet compression for image and video data; synthetic-natural hybrid coding. Offered in alternate years.—II. van der Schaar

(change in existing course—eff. spring 05)

**216. Low Power Digital Integrated Circuit Design (3)**

Lecture—3 hours. Prerequisite: course 118. IC design for low power and energy consumption. Low power architectures, logic styles and circuit design. Variable supply and threshold voltages. Leakage management. Power estimation. Energy sources, power electronics, and energy recovery. Applications in portable electronics and sensors. Thermodynamic limits.—II. (II.) Amirtharajah

(new course—eff. winter 06)

**242. Advanced Nanostructured Devices (3)**

Lecture—3 hours. Prerequisite: courses 130A and 140A. Physics of nano-structured materials and device operation. Overview of new devices enabled by nanotechnology; fabrication and characterization methods; applications of nano-structures and devices. Offered in alternate years.—(I.) Islam

(change in existing course—eff. fall 05)

**248. Microsensor Design and Fabrication (3)**

(cancelled course—eff. fall 05)

**253. Adaptive Systems (3)**

Lecture—3 hours. Prerequisite: course 150B; course 250 (may be taken concurrently.) Theory and practice of adaptive systems. Concepts of learning and adaptation. Structure of adaptive filters and the related parameter adaptive algorithms. Applications to system identification, adaptive signal processing, and adaptive control. Offered in alternate years.—(II.) Chang

(change in existing course—eff. winter 06)

**255. Robotic Systems (3)**

Lecture—3 hours. Introduction to robotic systems. Mechanical manipulators, kinematics, manipulator positioning and path planning. Dynamics of manipulators. Robot motion programming and control algorithm design. Offered in alternate years.—(II.) Gundes

(change in existing course—eff. winter 06)

**256. Multivariable Feedback Systems (3)**

(cancelled course—eff. fall 05)

**257. Topics in Optimization (3)**

(cancelled course—eff. fall 05)

**259. Fuzzy Systems and Control (3)**

(cancelled course—eff. fall 05)

**262. Multi-Access Communications Theory (4)**

Lecture—3 hours; project. Prerequisite: Statistics 120 or equivalent; course 173A or Engineering Computer Science 152A. Maximum stable throughput of Poisson collision channels. Classic collision resolution algorithms. Carrier sensing multiple access and its performance analysis. System stability analysis. Joint design of the physical/medium access control layers. Capacity region of multi-access channels. Multi-access with correlated sources. Offered in alternate years.—(III.) Zhao

(new course—eff. spring 06)

**267. Cellular Digital Mobile Communications (3)**

(cancelled course—eff. summer session I 05)

**268. Digital Modulation Techniques (3)**

(cancelled course—eff. fall 05)

**271. Multimedia Networking and Communications (4)**

Lecture—3 hours; project—2 hours. Prerequisite: knowledge of programming language (Matlab, C or C++); basic knowledge of computer networks and multimedia compression preferred, but not required. Concepts and principles that underlie transmission of multimedia across heterogeneous wired and wireless IP networks. Multimedia communication over internet and wireless networks; error resilient multimedia compression techniques; error control and error concealment strategies; multimedia streaming architectures; channel models and channel estimation strategies; joint source-channel coding techniques. Offered in alternate years.—II. van der Schaar

(new course—eff. winter 05)

## Engineering: Material Science

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### **New and changed courses in Engineering: Material Science (EMS)**

#### **Upper Division Courses**

##### **245. Advanced Topics in Structure of Materials (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 162; course 174 recommended; graduate standing in engineering or consent of instructor. Nature of microstructure in engineering materials. Crystalline and non-crystalline structures, with special emphasis on grain boundary segregation in the development of polycrystalline microstructure and the radial distribution function of amorphous materials. Offered in alternate years.—III. Shackelford

(change in existing course—eff. fall 04)

# Engineering: Mechanical

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## New and changed courses in Engineering: Mechanical (EME)

### Lower Division Courses

#### 107. Thermo Fluids Laboratory (4)

(cancelled course—eff. fall 06)

#### 107A. Experimental Methods (3)

Lecture—2 hours; laboratory—1.5 hours. Prerequisite: course 106; open to Mechanical Engineering, Aeronautical Science & Engineering and Mechanical/Materials Science Engineering Majors only. Experiments to illustrate principles of thermal-fluid systems. Statistical and uncertainty analysis of data; statistical design of experiments; measurement devices; Experiments involving thermodynamic cycles, combustion, compressible and incompressible flows. Only two units of credit for students who have previously taken Chemical Engineering 155A; only one unit of credit for students who have taken Chemical Engineering 155B; only two units of credit for students who have taken Civil and Environmental Engineering 141L.—I, II, III. (I, II, III.)

(new course—eff. fall 06)

#### 107B. Experimental Methods (3)

Lecture—2 hours; laboratory—3 hours. Prerequisite: Engineering 100, Engineering 104, (both may be taken concurrently), and course 107A. Experiments to illustrate principles of mechanical systems. Theory of measurements; Signal analysis; Demonstration of basic sensors for mechanical systems; Experimental project design; Experiments involving voltage measurement; strain gauges, dynamic systems of 0th, 1st and 2nd order. Only two units of credit for students who have previously taken Biomedical Engineering 111; only one unit of credit for students who have previously taken Biological Systems Engineering 165.—I, II, III. (I, II, III.)

(new course—eff. fall 06)

#### 161. Combustion and the Environment (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 106. Introduction to combustion kinetics; the theory of pre-mixed flames and diffusion flames; turbulent combustion; formation of air pollutants in combustion systems; examples of combustion devices which include internal combustion engines, gas turbines, furnaces and waste incinerators; alternative fuel sources.—III. (III.) Kennedy, Shaw

(change in existing course—eff. spring 06)

# Engineering: Mechanical and Aeronautical

## Changes in Lower Division Required Courses for Aeronautical Science and Engineering Major

|   | UNITS     |
|---|-----------|
| Mathematics 21A-21B-21C-21D .....   | 16        |
| Mathematics 22A-22B .....   | 6         |
| Physics 9A-9B-9C-9D .....   | 19        |
| Chemistry 2A-2B or 2AH-2BH .....  | 10        |
| Engineering 4 .....   | 3         |
| Engineering 6 or Mechanical Engineering 5 .....   | 4         |
| Engineering 17, 35, 45 .....  | 11        |
| English 3, or Comparative Literature 1, 2, 3, or 4, or<br>Native American Studies 5, or University Writing<br>Program 1 ..... | 4         |
| Communication 1 or 3 .....  | 4         |
| General Education electives .....   | 16        |
| <b>Minimum Lower Division Units .....</b>   | <b>93</b> |

## New and changed courses in Engineering: Mechanical and Aeronautical (MAE)

### Upper Division Courses

#### 207. Engineering Experimentation and Uncertainty Analysis (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Engineering 107. Design and analysis of engineering experiments with emphasis on measurement standards, data analysis, regressions and general and detailed uncertainty analysis, including statistical treatment of experimental data intervals, propagation of bias and precision errors, correlated bias approximations, and using jitter programs.—II. (II.) Baughn

(change in existing course—eff. winter 05)

#### 241. Advances in Finite Elements and Optimization (4)

(cancelled course—eff. winter 06)

#### 252. Information Processing for Autonomous Robotics (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Engineering 6, Mechanical Engineering 5, or equivalent programming experience, Mechanical Engineering 154, 171, or consent of instructor. Computational principles for sensing, reasoning, and navigation for autonomous robots. Offered in alternate years.—II. Joshi

(new course—eff. winter 05)

#### 255. Computer-Aided Design and Manufacturing (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: proficiency in a high level programming language such as Fortran, Pascal, or C. Representation and processing of geometrical information in design and manufacturing. Numeric and symbolic computations. Coordinate systems and transformations. Bezier and B-spline curves and surfaces. Interpolation and approximation methods. Intersections, offsets, and blends. Path planning for machining, inspection, and robotics applications. Offered in alternate years.—III. Farouki

(change in existing course—eff. spring 05)

#### 271. Advanced Modeling and Simulation of Mechatronic Systems (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: Mechanical Engineering 172 or the equivalent. Multiport models of mechanical, electrical, hydraulic, and thermal devices; bond graphs, block diagrams and state space equations; modeling of multiple energy domain systems; three-dimensional mechanics; digital simulation laboratory.—I. (I.) Karnopp, Margolis

(change in existing course—eff. winter 05)

# English

## Changes in A.B. Degree Requirements

|   | UNITS     |
|---|-----------|
| <b>Preparatory Subject Matter</b> .....   | <b>20</b> |
| English 3 or University Writing Program 1 .....   | 4         |
| Two courses from English 42, 43, 44, 45 .....   | 8         |
| Two courses from English 30A, 30B, 46A, 46B, 46C .....  | 8         |
| <b>Depth Subject Matter</b> .....   | <b>44</b> |
| English 110A or 110B .....  | 4         |
| English 117A, 117B, or 117C.....  | 4         |
| One course from five of the following six historical fields ..20  |           |
| (a) <i>Medieval</i> : English 111, 113A, 113B   |           |
| (b) <i>Renaissance</i> : English 115, 122   |           |
| (c) <i>British Literature—Restoration through Romantic period</i> :<br>English 123, 130, 155A   |           |
| (d) <i>British Literature—Victorian or Twentieth Century</i> : Eng-<br>lish 133, 137N, 138, 155B, 155C  |           |
| (e) <i>American Literature pre-1865</i> : English 142, 143, 158A  |           |
| (f) <i>American Literature post-1865</i> : English 144, 146N, 147,<br>158B, 166, 167, 181B, 182   |           |
| The following courses may be used to satisfy the above<br>requirement if they fall into that category for subject, time<br>period, etc. (Please refer to quarterly expanded course<br>descriptions.): English 150A, 150B, 152, 159, 165, 178,<br>179, 181A, 185A, 185B, 186   |           |
| Upper Division Seminar, one course selected from English<br>187, 188, 189, 194H .....   | 4         |
| Area of Emphasis (choose one).....  | 12        |
| <b>General Emphasis</b> :   |           |
| Three upper division English electives.....   | 12        |
| <b>Creative Writing Emphasis</b> :  |           |
| Three sections of English 100F, 100P and/or 100NF.....  | 12        |
| (Students pursuing the Creative Writing Emphasis may<br>replace the upper division seminar portion of the core<br>requirement with an upper division English elective.)   |           |
| <b>Teaching Emphasis</b> :  |           |
| University Writing Program 101 or 104A, 104B, 104C,<br>104D, 104E, or 104F .....  | 4         |
| English 105 or 106/Linguistics 106 .....  | 4         |
| One course selected from English 178, 179, 181A, 181B,<br>or an upper division ethnic literature course from outside<br>the English department .....  | 4         |
| <b>Total Units for the Major</b> .....  | <b>64</b> |
| <b>English Majors.</b> Up to four upper division units in a national litera-<br>ture other than English or American, or in Comparative Literature,<br>may count toward the requirements of the major.   |           |
| <b>Major Advisers.</b> D. P. Abbott, S. Chaganti, J. Clover, P. Dale, J.F.<br>Diehl, G. Dobbins, F. Dolan, M. Ferguson, L. Freed, E. Freeman, B.<br>Ghosh, S.M. Gilbert, W.J. Hicks, P. Houston, A. Johns, R.A. Levin,<br>C. Major, S.J. McPherson, P.L. Moran, L.A. Morris, T. Morton, M.<br>Osborn, R. Richardson, C.M. Robson, W. Schleiner, S. Shershow, K.<br>Shimakawa, S. Simmon, D. Simpson, D. Van Leer, R.B. Waddington,<br>C. Waters, E. Watkins, J. Wenderoth, A.B. Williamson, K.F. Zender,<br>M. Ziser. |           |
| <b>Meeting for Majors.</b> All new and prospective English majors are<br>invited to attend a general meeting for majors at the beginning of<br>each year; all English majors should see their advisers, individually,<br>in the spring quarters of their sophomore and junior years.  |           |
| <b>Foreign Languages.</b> Students who contemplate advanced study in<br>English should prepare for foreign language requirements for higher<br>degrees and should consult with the graduate adviser.  |           |
| <b>Undergraduate Adviser:</b> See Department Web site at<br><a href="http://www.english.ucdavis.edu">http://www.english.ucdavis.edu</a>   |           |

## Changes in Minor Program Requirements

|   | UNITS     |
|---|-----------|
| <b>English</b> .....  | <b>20</b> |
| <b>Five upper division courses, at least four of which will be<br/>literature courses</b> .....   | <b>20</b> |
| <b>Honors and Honors Program.</b> A Senior Honors Program is avail-<br>able to an invited group of English majors, who prepare and write<br>a Senior Thesis (either a research paper or creative writing) in their<br>final year. The honors program consists of four units of 194H and<br>four units of 195H, normally taken during the fall and winter quar-<br>ters of the senior year. Completion of the program is a prerequisite<br>for High or Highest Honors at graduation. Eligibility criteria and<br>application materials may be obtained at the Undergraduate Office,<br>176 Voorhies Hall. Refer to the Academic Information chapter for<br>Dean's Honors List information. |           |
| <b>Education Abroad options.</b> The department strongly encourages<br>interested students to pursue their studies abroad. It is possible for<br>students to complete significant portions of the English major pro-<br>vided that the course is evaluated as at least four UC Davis units;<br>the course is considered upper division by the standards set forth<br>by the Education Abroad Center; the student presents copies of the<br>coursework, syllabus, and writing assignments to the department's<br>advising staff.   |           |
| <b>Teaching Credential Subject Representative.</b> L. Morris. See also<br>under Teacher Education Program.  |           |
| <b>Graduate Study.</b> The Department of English offers programs of<br>study and research leading to the M.A. in literature and creative<br>writing and the Ph.D. in literature. Detailed information may<br>be obtained from the graduate adviser or the Chairperson of the<br>Department.   |           |
| The department's affiliation with the Critical Theory Program also<br>provides the opportunity for students in English to prepare for the<br>designated emphasis in Critical Theory (an interdisciplinary pro-<br>gram in theories and methodologies in the humanities and social<br>sciences).   |           |
| <b>Graduate Director.</b> See Department Web site at<br><a href="http://www.english.ucdavis.edu">http://www.english.ucdavis.edu</a> .   |           |
| <b>Subject A.</b> Students must have met the Subject A requirement before<br>taking any course in English. C. Bates, Director   |           |
| <b>Prerequisites.</b> English 3 or University Writing Program 1 is required<br>for admission into courses 30A, 30B, 42, 43, 44, 45, 46A, 46B, 46C,<br>and all upper division courses, unless otherwise stated in the course<br>listings. Course 45 is recommended as preparation for the 46 series<br>and all upper division literature courses. Comparative Literature 1,<br>2, 3, or 4 or Native American Studies 5 may normally be substituted<br>for English 3 or University Writing Program 1.   |           |

**New and changed courses in English (ENL)**

English 1, 18, 19, 101, 102 (A–G), 104 (A–F), 390, and 392 are cancelled and replaced by equivalent University Writing Program (UWP) courses, effective fall 2005.

English 92, 98, 99, 192, 197T, 197TC, 198, 199, 298, 299, and 396 now have equivalent University Writing Program (UWP) courses, effective fall 2005.

**Lower Division Courses****1. Expository Writing (4)**

Replaced by University Writing Program 1.

(cancelled course—eff. fall 05)

**18. Style in the Essay (4)**

Replaced by University Writing Program 18.

(cancelled course—eff. fall 05)

**19. Writing Research Papers (4)**

Replaced by University Writing Program 19.

(cancelled course—eff. fall 05)

**30A. Survey of American Literature (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. American literature from the seventeenth century to 1865. GE credit: ArtHum, Div, Wrt.—III.

(change in existing course—eff. fall 05)

**30B. Survey of American Literature (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. American literature from 1865 to the present. GE credit: ArtHum, Div, Wrt.—I.

(change in existing course—eff. fall 05)

**42. Approaches to Reading (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Close reading and interpretation of literature from a variety of traditional and contemporary approaches. Topics include textual and historical approaches; new criticism; formalism; psychological criticism; feminism and gender; reader-response; materialist approaches. Frequent written assignments. GE credit: Wrt.—I, II, III.

(change in existing course—eff. fall 05)

**43. Introduction to the Study of Drama (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Close reading of selected works of British and American drama from a range of historical periods. Introduction to critical terminology and dramatic genres. Frequent written assignments. GE credit: Wrt.—I, II.

(change in existing course—eff. fall 05)

**44. Introduction to the Study of Fiction (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Close reading of British and American fictional forms (short stories, novellas, novels). Frequent written exercises. GE credit: Wrt.—II, III.

(change in existing course—eff. fall 05)

**45. Introduction to the Study of Poetry (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Close reading of selections from English and American poetry. Frequent written exercises. GE credit: Wrt.—I, II, III.

(change in existing course—eff. fall 05)

**46A. Masterpieces of English Literature (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected works of principal writers to 1640. History of literary conventions and backgrounds in religious thought, intellectual and social history, and related art forms. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**46B. Masterpieces of English Literature (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected works of principal writers from 1640 to 1832. History of literary conventions and backgrounds in religious thought, intellectual and social history, and related art forms. GE credit: Wrt.—I, II.

(change in existing course—eff. fall 05)

**46C. Masterpieces of English Literature (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected works of principal writers from 1832 to present. The history of literary conventions and backgrounds in religious thought, intellectual and social history, and related art forms. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**92. Internship in English (1-12)**

Internship—3-36 hours. Prerequisite: course 3 or University Writing Program 1. Internships in fields where students can practice their skills. May be repeated for credit for a total of 12 units. (P/NP grading only.)

(change in existing course—eff. fall 05)

**98. Directed Group Study (1-5)**

Prerequisite: Prerequisite: course 3 or University Writing Program 1. (P/NP grading only.)

(change in existing course—eff. fall 05)

**Upper Division Courses****100NF. Creative Writing: Non-Fiction (4)**

Discussion—4 hours; development and evaluation of written materials, and conferences with individual students. Prerequisite: course 3 or University Writing Program 1, or consent of instructor; priority given to English (Creative Writing) majors. Writing of non-fiction. May be repeated for credit with consent of instructor. No final examination.—III.

(change in existing course—eff. fall 05)

**101. Advanced Composition (4)**

Replaced by University Writing Program 101.

(cancelled course—eff. fall 05)

**102A. Writing in the Disciplines (4)**

Replaced by University Writing Program 102A.

(cancelled course—eff. fall 05)

**102B. Writing in the Disciplines: Biological Sciences (4)**

Replaced by University Writing Program 102B.

(cancelled course—eff. fall 05)

**102C. Writing in History (4)**

Replaced by University Writing Program 102C.

(cancelled course—eff. fall 05)

**102D. Writing in International Relations (4)**

Replaced by University Writing Program 102D.

(cancelled course—eff. fall 05)

**102E. Writing in Engineering (4)**

Replaced by University Writing Program 102E.

(cancelled course—eff. fall 05)

**102F. Writing in Food Science and Technology (4)**

Replaced by University Writing Program 102F

(cancelled course—eff. fall 05)

**102G. Writing: Bioregion (4)**

Replaced by University Writing Program 102G.

(cancelled course—eff. fall 05)

**104A. Writing in the Professions: Business Reports and Technical Communication (4)**

Replaced by University Writing Program 104A.

(cancelled course—eff. fall 05)

**104B. Writing in the Professions: Law (4)**

Replaced by University Writing Program 104B.

(cancelled course—eff. fall 05)

**104C. Writing in the Professions: Journalism (4)**

Replaced by University Writing Program 104C.

(cancelled course—eff. fall 05)

**104D. Writing in the Professions: Elementary and Secondary Education (4)**

Replaced by University Writing Program 104D.

(cancelled course—eff. fall 05)

**104E. Writing in the Professions: Science (4)**

Replaced by University Writing Program 104E.

(cancelled course—eff. fall 05)

**104F. Writing in the Health Profession (4)**

Replaced by University Writing Program 104F.

(cancelled course—eff. fall 05)

**105. History of the English Language (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. History of the English language. Examination of the language as recorded from Old English to present-day English. Relationship of English to other languages; development of vocabulary, phonology, and grammatical patterns. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 05)

**106. English Grammar (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 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 Linguistics 106.) Not open for credit to students who have completed Linguistics 104. GE credit: ArtHum.—I, III.

(change in existing course—eff. fall 05)

**107. Freedom of Expression (4)**

Lecture—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historical development of fundamental issues and contemporary controversies about freedom of expression, with emphasis on literary and artistic censorship. Not open for credit to students who have completed Rhetoric and Communication 125 or Communication 107. (Former course Rhetoric and Communication 125.) GE credit: ArtHum, Wrt.

(change in existing course—eff. fall 05)

**110A. Introduction to Principles of Criticism (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Essentials of literary criticism and its history from Aristotle to the modern era, with emphasis on the major critics. GE credit: Wrt.—I, II, III.

(change in existing course—eff. fall 05)

**110B. Introduction to Principles of Criticism (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1. The history of literary criticism in the modern era, with emphasis on the ties with the past and the special problems presented by modern literary theory.—II, III.

(change in existing course—eff. fall 05)

**111. Topics in Medieval Literature (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically focused intensive examination of selected topics in Medieval British literature. May be repeated one time for credit when topic differs. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 05)

**113A. Chaucer: Troilus and the "Minor" Poems (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Development of the poet's artistry and ideas from his first work to his masterpiece, "Troilus and Criseyde." GE credit: ArtHum, Wrt.—I.

(change in existing course—eff. fall 05)

**113B. Chaucer: The Canterbury Tales (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Literary analysis of the complete "Canterbury Tales." Courtly love, literary forms, medieval science and astrology, theology and dogma as they inform the reading of Chaucer's work. GE credit: ArtHum, Wrt.—III.

(change in existing course—eff. fall 05)

**115. Renaissance Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of the Renaissance. May be repeated for credit when content differs. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**117A. Shakespeare: The Early Works (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected major works from Shakespeare's early period, up to 1599. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 05)

**117B. Shakespeare: The Middle Works (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected major works from Shakespeare's middle period, between 1599 and 1604. GE credit: ArtHum, Wrt.—I, II, III.

(change in existing course—eff. fall 05)

**117C. Shakespeare: The Later Works (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Selected major works from Shakespeare's later period, between 1604 and the end of his career. GE credit: ArtHum, Wrt.—I.

(change in existing course—eff. fall 05)

**118. Shakespeare (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Selected major works by Shakespeare. Recommended for non-majors. May not be applied toward the English major. GE credit: ArtHum, Wrt.

(change in existing course—eff. fall 05)



**122. Milton (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Selected major works, including *Paradise Lost*. GE credit: Wrt.—II.

(change in existing course—eff. fall 05)

**123. 18th-Century British Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of 18th-century English literature. May be repeated for credit when content differs. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**130. British Romantic Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of Romantic English literature. May be repeated for credit when content differs. GE credit: Wrt.—II.

(change in existing course—eff. fall 05)

**133. 19th-Century British Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of 19th-century English literature. May be repeated for credit when content differs. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**137N. British Literature, 1900-1945 (4)**

Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of British literature (drama, poetry, prose fiction) from the period between 1900 and the end of World War II. May be repeated two times for credit when topic differs. Only 2 units of credit to students who have completed course 137. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**138. British Literature: 1945 to Present (4)**

Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of British literature (drama, poetry, prose fiction) from the period between 1945 and the present. May be repeated two times for credit when topic differs. Only 2 units of credit to students who have completed course 137. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**139. World Literatures in English (4)**

Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1. Historically or regionally focused study of world literatures in English (other than the national literatures of the British Isles and the United States), particularly from post-colonial regions in Africa, the Caribbean, and Asia, and immigrant cultures in the English-speaking world. GE credit: ArtHum, Div, Wrt.—II.

(change in existing course—eff. fall 05)

**142. Early American Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of American literature of the 17th and 18th centuries. May be repeated for credit when content differs. GE credit: Wrt.—II.

(change in existing course—eff. fall 05)

**143. 19th-Century American Literature to the Civil War (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of 19th-century American literature. May be repeated for credit when content differs. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**144. Post-Civil War American Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of works of post-Civil War American literature. May be repeated for credit when content differs. GE credit: Wrt.

(change in existing course—eff. fall 05)

**146N. American Literature: 1900-1945 (4)**

Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of American literature (drama, poetry, prose fiction) from the period between 1900 and the end of World War II. May be repeated two times for credit when topic differs. Only 2 units of credit to students who have completed course 146. GE credit: Wrt.

(change in existing course—eff. fall 05)

**147. American Literature, 1945 to the Present (4)**

Lecture—3 hours; extensive writing. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused study of American literature (drama, poetry, prose fiction) from the period between 1945 and the present. May be repeated two times for credit when topic differs. Only 2 units of credit to students who have completed course 146. GE credit: Wrt.

(change in existing course—eff. fall 05)

**149. Topics in Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Intensive examination of literature considered in topical terms, not necessarily historically. May be repeated for credit when content differs. GE credit: Wrt.—I, III.

(change in existing course—eff. fall 05)

**150A. British Drama to 1800 (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically focused study of works of English drama prior to 1800. May be repeated for credit when content differs. GE credit: Wrt.

(change in existing course—eff. fall 05)

**150B. British Drama from 1800 to the Present (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically focused study of works of British drama from 1800 to the present. May be repeated for credit when topic differs. GE credit: Wrt.

(change in existing course—eff. fall 05)

**152. American Drama (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Study of American dramatic literature. Either a historical survey from 18th-century beginnings to the present or an in-depth analysis of fewer playwrights, such as O'Neill, Miller, Williams. May be repeated for credit when content differs. GE credit: Wrt.

(change in existing course—eff. fall 05)

**153. Topics in Drama (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historical or thematic study of drama. May be repeated for credit when topic differs. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**155A. 18th-Century British Novel (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of the 18th-century British novel, with particular emphasis on its evolution, including the epistolary novel, the picaresque novel, and the Gothic novel: Richardson, Fielding, Sterne, Austen. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**155B. 19th-Century British Novel (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of 19th-century British novelists, with emphasis on the historical novel, the social novel, and novels by women: Scott, Dickens, the Brontës, Eliot, Hardy. GE credit: Wrt.—II.

(change in existing course—eff. fall 05)

**155C. 20th-Century British Novel (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of the 20th-century British novel, with emphasis on impressionism; the revolt against naturalism; the experimental novel; the anti-modernist reaction: Conrad, Joyce, Woolf, Lawrence, Drabble, Rhys. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**156. The Short Story (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. The short story as a genre; its historical development, techniques, and formal character as a literary form. European as well as American writers. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 05)

**158A. The American Novel to 1900 (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of the rise and development of the American novel from its beginnings; Hawthorne, Melville, Twain, James, and others. GE credit: Wrt.—III.

(change in existing course—eff. fall 05)

**158B. The American Novel from 1900 to the Present (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Historically or thematically organized examination of American novelists of the twentieth century; Faulkner, Hemingway, Fitzgerald, Morrison, and others. GE credit: Wrt.—II.

(change in existing course—eff. fall 05)

**159. Topics in the Novel (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Examination of major novels arranged thematically. Topics might include Bildungsroman, stream-of-consciousness novel, Gothic novel, historical novel. May be repeated for credit when topic differs. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**160. Film as Narrative (4)**

Lecture—3 hours; film viewing: 3 hours. Prerequisite: course 3 or University Writing Program 1. A study of modern film (1930 to present) as a storytelling medium. Offered in alternate years. GE credit: ArtHum, Wrt.—III.

(change in existing course—eff. fall 05)

**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 filmmaking 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.—I.

(change in existing course—eff. fall 05)

**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 filmmaking from 1945 through the present. (Courses 161A and 161B need not be taken in sequence.) Offered in alternate years. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 05)

**162. Film Theory and Criticism (4)**

Laboratory—3 hours; discussion—2 hours; lecture—1 hour. 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.

(change in existing course—eff. fall 05)

**163S. Topics in British Literature and Culture (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3 or University Writing Program 1. Study of writers, playwrights and novelists who worked in London. Examination of Elizabethan, Restoration, Augustan, Romantic/Victorian, and the Modernist/Post-Modernist periods. To be taught in London. GE credit: ArtHum, Wrt.

(change in existing course—eff. fall 05)

**165. Topics in Poetry (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 and course 45. Intensive examination of various topics expressed in poetry from all periods of English and American literature. May be repeated for credit when topic covers different poets and poems. GE credit: Wrt.—I, II.

(change in existing course—eff. fall 05)

**166. Love and Desire in Contemporary American Poetry (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Close reading of contemporary American poems on the theme of love and desire by poets of diverse ethnicities and of gay, lesbian, and heterosexual orientations. Offered in alternate years. GE credit: Div, Wrt.—III.

(change in existing course—eff. fall 05)

**167. Twentieth-Century African American Poetry (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Twentieth-century African American poetry, including oral and literary traditions. Authors covered may include Gwendolyn Brooks, Countee Cullen, Robert Hayden, and Langston Hughes. Offered in alternate years. GE credit: Div, Wrt.

(change in existing course—eff. fall 05)

**171A. The Bible as Literature: The Old Testament (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. May be taken independently of course 171B. Selected readings from the Old Testament illustrating various literary forms. Emphasis on the Pentateuch, the Historical Books, and the Wisdom Books. Offered in alternate years. GE credit: ArtHum, Div, Wrt.

(change in existing course—eff. fall 05)

**171B. The Bible as Literature: Prophets and New Testament (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. May be taken independently of course 171A. Selected readings from the Old Testament prophets and the New Testament. Offered in alternate years. GE credit: ArtHum, Div, Wrt.

(change in existing course—eff. fall 05)

**173. The Literature of Science Fiction (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Study of the literary modes and methods of science fiction. The course will analyze representative novels and short stories which exemplify major themes and styles in this genre—e.g., time travel; alternative universes; utopian, anthropological, sociological science fiction. GE credit: ArtHum, Wrt.

(change in existing course—eff. fall 05)

**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 masters; local colorists; journalistic gadflies; anti-provincialists; modernist poets and prose writers; black humor. GE credit: ArtHum, Wrt.

(change in existing course—eff. fall 05)

**177. Study of an Individual Author (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Survey of the works of an individual author other than Chaucer, Shakespeare, or Milton. May be repeated for credit when a different author is studied. GE credit: Wrt.—I.

(change in existing course—eff. fall 05)

**178. Special Topics in Ethnic Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Intensive study of a topic drawn from multiethnic literature. Course may focus on particular ethnic groups, historical periods, writers, genres, and/or themes. May be repeated one time for credit when topic differs. GE credit: Div, Wrt.—II.

(change in existing course—eff. fall 05)

**179. Multi-Ethnic Literature of the United States (4)**

Lecture—3 hours; extensive writing or discussion—1 hour. Prerequisite: course 3 or University Writing Program 1 or standing above freshman level. Writings by American authors of diverse races and ethnicities (African American, Asian, Jewish, Latin American, Native American, and mixed ancestry) clarifying the roles of storytelling and cultural heritage in constructing identity, experiencing displacement, recovering history, and cultivating an inclusive society. GE credit: ArtHum, Div, Wrt.

(change in existing course—eff. fall 05)

**180. Children's Literature (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historical backgrounds and development of types of children's literature, folklore and oral tradition, levels of interest, criticism and evaluation, illustration and bibliography. GE credit: ArtHum, Wrt.—I.

(change in existing course—eff. fall 05)

**181A. African American Literature to the Harlem Renaissance (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. African American literature from the slavery period to the end of the 1930s. Particular attention to the rapid development of the African American literary culture from a primarily oral tradition. Offered in alternate years. GE credit: Div, Wrt.—III.

(change in existing course—eff. fall 05)

**181B. African American Literature from the Harlem Renaissance to the Present (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1 or the equivalent. Major African American writers in the context of cultural history from 1940 to the present. Writers may include Richard Wright, Ann Petry, James Baldwin, Ralph Ellison, Paule Marshall, Toni Morrison, Alice Walker, Clarence Major. Offered in alternate years. GE credit: Div, Wrt.—I.

(change in existing course—eff. fall 05)

**182. Literature of California (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. California literature in the context of California's social, political, and intellectual history. Reading of poetry, fiction, and essays. Emphasis on nineteenth- and twentieth-century naturalists, turn of the century novelists, the Beats, and writers of the last two decades. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—III.

(change in existing course—eff. fall 05)

**183. Adolescent Literature (4)**

Lecture—3 hours; term paper. Prerequisite: acceptance to the English Department Subject Matter Preparation Program or consent of instructor. The theoretical, critical, and literary complexities that inform the study and teaching of American adolescent literature.

(change in existing course—eff. spring 05)

**184. Literature of the Wilderness (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Study of the theme of wilderness primarily in American Literature, with some consideration of Biblical and European antecedents. Major attention given to Thoreau, Muir, London, Austin, Faulkner, Snyder, and Abbey. Offered in alternate years. GE credit: ArtHum, Wrt.

(change in existing course—eff. spring 05)

**185A. Literature by Women I (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. English language literature by women from Bradstreet and Behn to the Brontes, Eliot, and Dickinson. The effects of social constraints upon women's art; the rise of feminism; new trends in literary criticism. GE credit: Div, Wrt.

(change in existing course—eff. spring 05)

**185B. Literature by Women II (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1; course 185A recommended. English language literature by women from Chopin and Woolf to Plath, Rich, and Morrison. The effects of social constraints upon women's art; the rise of feminism; new trends in literary criticism. GE credit: Div, Wrt.—III.

(change in existing course—eff. spring 05)

**186. Literature, Sexuality, and Gender (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 3 or University Writing Program 1. Historically or thematically focused intensive examinations of gender and sexuality in British and American literature. May be repeated for credit when content differs. GE credit: Div, Wrt.—III.

(change in existing course—eff. spring 05)

**192. Internship in English (1-12)**

Internship—3-36 hours. Prerequisite: course 3 or University Writing Program 1. Internships in fields where students can practice their skills. A maximum of four units is allowed toward the major in English. May be repeated for credit for a total of 12 units. (P/NP grading only.)

(change in existing course—eff. spring 05)

**Graduate Courses****210. Readings in English and American Literature (4)**

Seminar—3 hours; conference—1 hour. Prerequisite: upper division course in area studied. Content varies according to specialty of instructor. May be repeated if topic differs.

(change in existing course—eff. winter 05)

**290NF. Seminar in Creative Writing of Non-Fiction (4)**

Seminar—3 hours; term paper. Prerequisite: consent of instructor, graduate standing, preference given to those enrolled in the master's program in Creative Writing. The writing of literary non-fiction, with emphasis on autobiography, biography, memoir, the occasional or nature essay, or other non-fiction prose narratives. May be repeated for credit.

(change in existing course—eff. fall 04)

**Professional Courses****390. Theory and Practice of University-Level Composition Instruction (4)**

Replaced by University Writing Program 390.

(cancelled course—eff. fall 05)

**392. Teaching Expository Writing (2)**

Replaced by University Writing Program 392.

(cancelled course—eff. fall 05)

# Entomology

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## New and changed courses in Entomology (ENT)

### Upper Division Courses

#### **1405. Biodiversity and Conservation in South Africa (8)**

Lecture—3 hours; lecture/discussion—2 hours; term paper; field work. Prerequisite: Biological Sciences 1A, 1B, 1C. A comprehensive overview of biodiversity in a South African context. This Quarter Abroad course, based in Stellenbosch, provides immersion in another culture and exposure to a novel biota. Field visits involve weekends and homework requires evening effort. Limited enrollment. May be repeated once for credit. Only six units of credit allowed to students who have previously taken course 2 or Evolution and Ecology 2. Engineering 36. GE credit: SciEng, Wrt.—II. (II.) Cranston, Gullan

(new course—eff. winter 07)

### Graduate Courses

#### **214. Vector-Borne Infectious Diseases: Changing Patterns (2)**

Lecture/discussion—2 hours. Vector-borne infectious diseases especially as they relate to changing patterns associated with climatic changes, trade and population movement. (Same course as Population Health and Reproduction 214.)—I. (I.) Edman, Chomel

(new course—eff. fall 04)

## Environmental and Resource Sciences

### Changes in B.S. Major Requirements for Environmental and Resource Sciences Major

|   | UNITS        |
|---|--------------|
| <b>Written/Oral Expression</b> .....  | <b>0-8</b>   |
| See College requirement   |              |
| <b>Preparatory Subject Matter</b> .....   | <b>53-69</b> |
| Biological Sciences 1A-1B-1C.....   | 15           |
| Chemistry 2A-2B.....  | 10           |
| Economics 1A .....  | 5            |
| Environmental Toxicology 10 .....   | 3            |
| Geology 1 or 50.....  | 3-4          |
| Environmental and Resource Sciences 60.....   | 3            |
| Mathematics 16A-16B or 21A-21B.....   | 6-8          |
| Agricultural Management and Rangeland Resources 21, 121, Engineering 5, Computer Science Engineering 10, 15. 3-4  |              |
| Physics 1A-1B or 7A-7B-7C or 9A-9B-9C—see option requirements .....   | 6-12         |
| Physics 7A-7B-7C or 9A-9B-9C required for Air option.   |              |
| Statistics 13 or 100 or 102.....  | 4            |
| <b>Breadth/General Education</b> .....  | <b>18-24</b> |
| Satisfaction of General Education requirements; additional units in social sciences and humanities to total 24 units.   |              |
| <b>Depth Subject Matter</b> .....   | <b>24-27</b> |
| Written expression (in addition to college requirement), University Writing Program 101, 104A, 104B, 104C, 104D, 104E, or 104F .....  | 4            |
| Agricultural and Resource Economics 147 or 148.....   | 3-4          |
| Atmospheric Science 60 or Environmental and Resource Sciences 131.....  | 3-4          |
| Soil Science 100.....   | 4            |
| Environmental and Resource Sciences 100 or 121 .....  | 3-6          |
| Agricultural Management and Rangeland Resources 101, Environmental Science and Policy 161, 179; Environmental Toxicology 138, Geology 134, Nature and Culture 120, Political Science 107, 171 or Wildlife, Fish, and Conservation Biology 154.....  | 3-4          |
| Agricultural Management and Rangeland Resources 130, Entomology 104, Environmental and Resource Sciences 144, Environmental Science and Policy 100, Evolution and Ecology 101, or Plant Biology 117 or 142 .....  | 3-4          |
| Atmospheric Science 192 .....   | 3            |
| <b>Areas of Specialization (choose one)</b>   |              |
| <b>Air Resource Option</b> .....  | <b>26-28</b> |
| Directed towards a general understanding of the atmosphere as a finite resource and of environmental problems currently faced by humankind. The option provides a broad understanding of the physical and chemical properties of the atmosphere, including the impacts of air pollution and global climate change. Employment opportunities include positions within federal, state, and county agencies concerned with environmental quality and with private companies. |              |
| Atmospheric Science 30, 110, 116, 124, 133 .....  | 16           |
| Environmental Science and Policy 110 .....  | 4            |
| Choose two from Atmospheric Science 115, 149, 160; Environmental and Resource Sciences 131, 173, 185, 186; or Environmental Science and Policy 116 .....  | 6-8          |
| <b>Unrestricted electives (to total 180)</b> .....  | <b>25-52</b> |

### Environmental Resources Option .....

**18-26**  
For the general study of the physical, chemical and biological features of renewable natural resources, and the economic and social considerations associated with their use, protection and management. For those who plan careers associated with resource utilization and management, and those pursuing post-baccalaureate, academic, or professional training.

Choose at least two from Soil Science 111, 112, 118; Geology 130, 134 .....

Choose at least two from Atmospheric Science 116, 124, 133, 160; Environmental Toxicology 131, 138.....

Choose at least two from Agricultural Management and Rangeland Resources 132; Environmental and Resource Sciences 136, 144, 173, 185, 186; Geology 135; Hydrologic Science 134, 141, 145 .....

### Unrestricted electives (to total 180) .....

#### GIS and Remote Sensing Option .....

**26**  
Conceptual and practical training in the application of remote sensing technology and geographical information systems to natural resource assessment and to monitoring human impacts on the environment. Appropriate training for those seeking employment as GIS specialists with natural resource management agencies or environmental consulting firms.

Environmental and Resource Sciences 105, 185, 186; Applied Biological Systems Technology 180, 181, 182 .....

#### Unrestricted Electives (to total 180).....

#### Hydrobiology Option .....

**32-35**  
Training in the biological aspects of water resources focusing on the understanding and protection of polluted and unpolluted water systems; the structure, function, and principles of aquatic systems. Graduates may seek employment with state and federal agencies such as Water Resources Control Board, Department of Fish and Game, Department of Water Resources, or consulting firms concerned with environmental impacts.

Choose 28-35 units from Entomology 116; Environmental and Resource Sciences 136; Environmental Science and Policy 123, 124, 151, 155; Environmental Toxicology 101; Geology 116, 135, 139; Hydrologic Science 134, 141; Plant Biology 118, 178; Wildlife, Fish, and Conservation Biology 120, 120L, 123, 153.....

#### Unrestricted Electives (to total 180).....

#### Land and Water Management Option.....

**17-29**  
A broad background in management of soil and water resources in both natural and agricultural ecosystems. Emphasis on analysis of soils and plants for estimating crop nutrient requirements and principles of irrigation and drainage of agricultural land. Appropriate for those seeking employment with state and federal agencies or with agroindustry.

Choose at least two from Soil Science 105, 109, 111, 118, 120 .....

Choose at least two from Hydrologic Science 110, 124, 134, 141, 143, 144 .....

Choose at least one from Agricultural Management and Rangeland Resources 132; Environmental and Resource Sciences 144, 173; Geology 134, 135 .....

#### Unrestricted Electives (to total 180).....

**Plant Environmental Interactions Option .....22-28**

Provides background in plant functioning and allows integration of biological and environmental science to provide understanding of natural and managed ecosystems. (Note: Chemistry 8A, 8B prerequisite to Plant Biology 111 and 112.)

Choose 23-28 units from Agricultural Management and Rangeland Resources 130, 131; Atmospheric Science 133; Environmental and Resource Sciences 144, 173; Environmental Science and Policy 123, 155; Hydrologic Science 124; Plant Biology 111, 111D, 111L, 112, 112D, 117, 141, 142, 157, 158; Soil Science 109, 111, 112 ..... 23-28

**Unrestricted Electives (to total 180).....23-55**

**Total Units for the Major..... 180**

**New and changed courses in Environmental and Resource Sciences (ERS)****Lower Division Courses****10. California: The State (3)**

(cancelled course—eff. fall 05)

**10G. California: The State (Discussion) (1)**

(cancelled course—eff. fall 05)

**Upper Division Courses****105. Principles of Cartography for GIS (4)**

(cancelled course—eff. fall 05)

**173. Humans and Vegetation Change (4)**

(cancelled course—eff. fall 05)

# Environmental Biology and Management

## Changes in B.S. Major Requirements for Environmental Biology and Management Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>6-15</b>  |
| See College requirement.....   | 0-8          |
| University Writing Program 102A, 102B, 102C, 102D, 102E, 102F, or 102G .....   | 4            |
| Communication I or Dramatic Art 10 .....   | 3-4          |
| <b>Preparatory Subject Matter</b> .....  | <b>49-54</b> |
| Biological Sciences 1A, 1B, 1C .....   | 15           |
| Chemistry 2A-2B or 2AH-2BH .....   | 10           |
| Agricultural Management and Rangeland Resources 21, or Computer Science Engineering 10, 15, or 30 .....  | 3-4          |
| Environmental Science and Policy 1 or 30; choose Environmental Science and Policy 1 if the Environmental Management option is selected .....   | 3-4          |
| Political Science 1 or Economics 1A; choose Economics 1A if Environmental Management option is selected.....   | 4-5          |
| Mathematics 16A-16B or 21A-21B.....  | 6-8          |
| Physics 7A-7B or 9A-9B .....   | 8            |
| <b>Breadth/General Education</b> .....   | <b>12-24</b> |
| Satisfaction of General Education requirement to include 12 units of humanities and/or Civilization and Culture 12-24  |              |
| <b>Depth Subject Matter</b> .....  | <b>28-33</b> |
| (These units must be taken for a letter grade attaining an overall grade-point average of 2.0 or higher.)  |              |
| Select one of Plant Biology 117, Environmental Science and Policy 100, Evolution and Ecology 101, Wildlife, Fish, and Conservation Biology 151.....  | 4            |
| Environmental Science and Policy 110 and 172 .....   | 8            |
| Select two courses from Atmospheric Science 120, Environmental Science and Policy 150A, Environmental and Resource Sciences 121, 131, Geology 134, Hydrologic Science 141, Soil Science 100, 118.....  | 6-8          |
| Select one course from Environmental Science and Policy 161, 163, 166, 171, 179; Agricultural and Resource Economics 147, 175, 176 .....   | 3-4          |
| (Choose Agricultural and Resource Economics if Environmental Management option is selected.)   |              |
| Select one course from: Mathematics 16C, 21C, 22A, 22B, Agricultural Management and Rangeland Resources 120, Statistics 102 or upper division mathematics, computing or statistics. Environmental Management students should enroll in Agricultural Systems and Environment 120, or Statistics 102 ..... | 3-4          |
| Environmental Science and Policy 123, 178, or Wildlife, Fish, and Conservation Biology 100. Management students should enroll in Environmental Science and Policy 178 .....  | 4            |
| <b>Areas of Specialization</b> .....   | <b>25-40</b> |
| Conservation Biology and Management Option   |              |
| Wildlife, Fish, and Conservation Biology 154 .....   | 4            |
| Biological Sciences 101 .....  | 4            |
| Choose one from Evolution and Ecology 100, 102, 138, 147, 149, Geology 107.....  | 3-4          |

|   |      |
|---|------|
| Agricultural and Resource Economics 176 or Environmental Science and Policy 175 .....   | 4    |
| (Students must select a course that was not taken in "Depth Subject Matter.")   |      |
| Choose one from Agricultural and Resource Economics 147, Environmental Science and Policy 161, 166, 171, 172 3-4 (Students must select a course that was not taken in "Depth Subject Matter.")  | 4    |
| Environmental Science and Policy 121 or Wildlife, Fish, and Conservation Biology 122.....   | 4    |
| Choose from Environmental Science and Policy 123, 124, 151L, 155L, Wildlife, Fish, and Conservation Biology 100, 102 .....  | 3-10 |
| (Students may select Biological Sciences 122 or a course at an approved field station or an off-campus field biology research site.)  |      |
| <b>Environmental Biology Option</b>   |      |
| Choose one of Anthropology 154A, Entomology 104, Neurobiology, Physiology, and Behavior 102, Psychology 122, Wildlife, Fish, and Conservation Biology 141 .....   | 3-5  |
| Choose one of Biological Sciences 101, Evolution and Ecology 100, Geology 107 .....   | 3-4  |
| Mathematics 22A-22B, upper division mathematics or statistics.....  | 6-8  |
| Choose from Entomology 103, Evolution and Ecology 112-112L, Plant Biology 102, 108, 116, Wildlife, Fish, and Conservation Biology 110, 110L, 111, 111L, 120, 120L4-8  | 8    |
| Note: Most of these courses require one or two additional chemistry or basic physiology courses as prerequisites. Plan a sequence in consultation with adviser.   |      |
| Choose from Entomology 102, Environmental Horticulture 102, Neurobiology, Physiology, and Behavior 101, 101L, Plant Biology 111, or Wildlife, Fish, and Conservation Biology 121 .....  | 3-5  |
| Choose two courses from the following: Avian Sciences 100, Environmental Science and Policy 121, 151, 151L, 150B, 150C, 155, 155L, Evolution and Ecology 149, Hydrologic Science 122, 122L, Plant Biology 102, 117, Wildlife, Fish, and Conservation Biology 100, 120, 120L, 122, 130 ... | 4-8  |
| <b>Environmental Management Option</b>  |      |
| Agricultural and Resource Economics 170 or Environmental Science and Policy 170 .....   | 4    |
| Economics 100 or 104 or Agricultural and Resource Economics 100A .....  | 4-5  |
| Environmental Science and Policy 161, 166, 169, or 171 .....  | 4    |
| Environmental Science and Policy 179 .....  | 3    |
| Agricultural and Resource Economics 106 or Sociology 106 or Statistics 108.....   | 4    |
| Management of a natural resource, choose two courses from one of the following three groups.....  | 6-8  |
| <i>Animal Resources:</i> Agricultural Management and Rangeland Resources 135, or Wildlife, Fish, and Conservation Biology 110, 111, 120, 122, 151, 154, or Environmental Science and Policy 123.  |      |
| <i>Forest and Rangeland Resources:</i> Agricultural Management and Rangeland Resources 131, 134.  |      |
| <i>Air, Water, and Soil Resources:</i> Environmental and Resource Sciences 131, or Hydrologic Science 103, 122, 141, or Soil Science 118, or Environmental Science and Policy 151 and 151L, 155 and 155L.   |      |

**Unrestricted Electives** .....

**Total Units for the Degree**.....



## Changes in Minor Requirements for Environmental Biology and Management Minor

### Minor Program Requirements

The faculty for Environmental Biology and Management offers a minor in Recreation for students in Physical Education, Psychology, Sociology, or Human Development; students in Landscape Architecture desiring to specialize in recreation area design; Community and Regional Development students wishing to work in educational and therapeutic recreation; Environmental Policy Analysis and Planning students seeking careers in public recreation policy analysis and management; Agricultural and Managerial Economics students wishing to go into the administration of commercial recreation enterprises; and those students in Plant Science interested in park landscape construction and maintenance.

UNITS

### Recreation..... 19-20

|   |     |
|---|-----|
| Agricultural and Resource Economics 147, 176 .....  | 3-4 |
| Environmental Planning and Management 134.....  | 4   |
| Recreation policy analysis (see adviser) .....  | 4   |
| Agricultural and Resource Economics 112, Community<br>and Regional Development 163, Political Science<br>183, 189 ..... | 4   |
| Internship in Recreation Management, Environmental<br>Science and Policy 192 .....                                      | 4   |

# Environmental Horticulture

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## Change in Minor Program Requirements for Environmental Horticulture Minor

|  | UNITS        |
|--|--------------|
| <b>Environmental Horticulture</b> .....                                | <b>22-24</b> |
| Environmental Horticulture 6.....                                      | 3            |
| Plant Biology 171 .....  | 4            |
| Environmental Horticulture 105, 107, or 149 .....                      | 4            |
| Select two courses from Environmental Horticulture 125, 130, 133 ..... | 7-9          |
| Environmental Horticulture 110 or 112 .....                            | 4            |

**Minor Advisers:** J.A. Harding or D.W. Burger.

**Related Undergraduate Programs.** See the undergraduate majors in Environmental Horticulture and Urban Forestry, Agricultural Management and Rangeland Resources, and Environmental Biology and Management.

**Graduate Study.** For graduate study, refer to the Graduate Studies chapter of this catalog.

**Related Courses.** See Plant Biology.

## New and changed courses in Environmental Horticulture (ENH)

### Graduate Courses

**110. Urban and Regional Planning (4)**  
(cancelled course—eff. spring 06)

**112. Recreation Planning (4)**  
(cancelled course—eff. spring 06)

**149. Evolution and Diversity of Environmental Plants (4)**  
(cancelled course—eff. spring 06)

# Environmental Policy Analysis and Planning

## Changes in B.S. Major Requirements for Environmental Science and Policy Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>10-11</b> |
| See College requirement.....   | 0-8          |
| University Writing Program 102A, 102B, 102C, 102D, 102E, 102F or 102G concurrently with Environmental Science and Policy 1 .....                               | 4            |
| Communication 1 or Dramatic Art 10 .....   | 3-4          |
| <b>Preparatory Subject Matter</b> .....  | <b>50-56</b> |
| Biological Sciences 1A or 10 .....   | 4-5          |
| Chemistry 2A, 2B .....   | 10           |
| Agricultural Management and Rangeland Resources 21, Engineering 5, Computer Science Engineering 10, 30 .....   | 3-4          |
| Economics 1A, 1B .....   | 10           |
| Animal Science 1, Biological Sciences 1B, Geology 1, Hydrologic Science 124, Plant Biology 12, Soil Science 100 .....  | 3-5          |
| Environmental Science and Policy 1 .....   | 4            |
| Mathematics 16A-16B or 21A-21B.....  | 6-8          |
| Physics 1A .....   | 3            |
| Political Science 1 .....  | 4            |
| Statistics 13, 32, 102 .....   | 3-4          |
| <b>Breadth/General Education</b> .....   | <b>6-24</b>  |
| Satisfaction of General Education requirement .....  |              |
| <b>Depth Subject Matter</b> .....  | <b>42-45</b> |
| (Students must take these units on a letter grade basis, and must attain an overall grade point average of 2.0 or higher in the Depth Subject Matter courses.) |              |
| Environmental Science and Policy 110, 160, 164, 168A .....   | 16           |
| Environmental Science and Policy 166, 172 or Political Science 187 .....   | 4            |
| Environmental Science and Policy 161 or 173 .....  | 4            |
| Environmental Science and Policy 171 or 179*.....  | 3-4          |
| Environmental Science and Policy 178 or Community and Regional Development 160.....  | 4            |
| Select one from Sociology 106, Statistics 100, 103, 108, Economics 140 .....   | 4            |
| Economics 100 or Agricultural and Resource Economics 100A.....   | 4-5          |
| Agricultural and Resource Economics 175 or 176.....  | 4            |
| <br>   |              |
| * Students taking Environmental Science and Policy 179 are strongly encouraged to take Environmental Science and Policy 179L concurrently.                     |              |
| <br>   |              |
| <b>Areas of Specialization (choose one)</b> .....  | <b>17-20</b> |
| Advanced Policy Analysis Option  |              |
| Political Science 102, 105, 108, or 155 .....  | 4            |
| Political Science 164, 165, or 170 .....   | 4            |
| Environmental Science and Policy 165, Political Science 175 .....  | 4            |
| Environmental Science and Policy 168B.....   | 4            |
| Civil and Environmental Engineering 153, Agricultural and Resource Economics 106, Agricultural Management and Rangeland Resources 121, or Economics 130 .....  | 4            |
| City and Regional Planning Option  |              |
| Applied Biological Systems Technology 180, Agricultural Management and Rangeland Resources 132.....  | 3-5          |
| Civil and Environmental Engineering 165, Environmental   |              |

|  |     |
|--|-----|
| Science and Policy 163 .....   | 3-4 |
| Soil Science 118 or Environmental Science and Policy 1793-4  |     |
| Environmental Science and Policy 172 .....   | 4   |
| Political Science 100, 102, Community and Regional Development 152, 156, 157, 171.....   | 4   |
| (Enroll for Environmental Science and Policy 173 under Depth Subject Matter above.)  |     |
| Energy Policy Option   |     |
| Environmental Science and Policy 126 or Environmental Toxicology 101.....  | 4   |
| Engineering 160 .....  | 4   |
| Geology 130 .....  | 3   |
| Environmental Science and Policy 175 .....   | 4   |
| Environmental Science and Policy 163, 167 .....  | 4   |
| Environmental Science Option   |     |
| Students choosing the Environmental Science area of specialization must consult with a faculty adviser to identify an emphasis within this specialization and to select suitable courses. Possible areas of emphasis are biological conservation, pollutants in the environment, ecology, planning in the presence of environmental hazards. If you are considering this area of specialization, please contact the major adviser as soon as possible. |     |
| Transportation Planning Option   |     |
| Civil and Environmental Engineering 165.....   | 3   |
| Environmental Science and Policy 167, 168B, 172, 175, Agricultural Management and Rangeland Resources 121, 132, Applied Biological Systems Technology 180.....   | 8-9 |
| Environmental and Resource Sciences 131 .....  | 3   |
| Environmental Science and Policy 163 .....   | 4   |
| Water Quality Option   |     |
| Environmental Science and Policy 172.....  | 4   |
| Environmental and Resource Science 121, Geology 135 .....  | 3   |
| Hydrologic Science 141, 143, Geology 134, Soil Science 118 .....   | 3-4 |
| Environmental Science and Policy 151, 155, Environmental and Resource Sciences 100, Hydrologic Sciences 122, Wildlife, Fish, and Conservation Biology 120 .....  | 3-4 |
| Environmental Science and Policy 168B, 175, Applied Biological Systems Technology 180, Agricultural Management and Rangeland Resources 121, 132 .....  | 4-5 |

**Unrestricted Electives** .....

**Total Units for the Degree**.....

## Changes in Minor Requirements for Environmental Science and Policy Minor

The faculty for environmental policy analysis and planning offers the following minor. The Environmental Policy Analysis minor is for natural and social science students desiring basic training in policy analysis theory and methods.

|   | UNITS        |
|---|--------------|
| <b>Environmental Policy Analysis</b> .....                    | <b>23-24</b> |
| Preparation: Economics 1A; basic course in political science. |              |
| Environmental Science and Policy 1 .....                      | 4            |
| Environmental Science and Policy 160, 161, 168A .....         | 13           |
| Environmental Science and Policy 163, 170, 171, 172, 1796-8   |              |

## Environmental and Resource Sciences

### Changes in B.S. Major Requirements for Environmental and Resource Sciences Major

|   | UNITS        |
|---|--------------|
| <b>Written/Oral Expression</b> .....  | <b>0-8</b>   |
| See College requirement   |              |
| <b>Preparatory Subject Matter</b> .....   | <b>53-69</b> |
| Biological Sciences 1A-1B-1C.....   | 15           |
| Chemistry 2A-2B.....  | 10           |
| Economics 1A .....  | 5            |
| Environmental Toxicology 10 .....   | 3            |
| Geology 1 or 50.....  | 3-4          |
| Environmental and Resource Sciences 60.....   | 3            |
| Mathematics 16A-16B or 21A-21B.....   | 6-8          |
| Agricultural Management and Rangeland Resources 21, 121, Engineering 5, Computer Science Engineering 10, 15 .....   | 3-4          |
| Physics 1A-1B or 7A-7B-7C or 9A-9B-9C—see option requirements .....   | 6-12         |
| Physics 7A-7B-7C or 9A-9B-9C required for Air option.   |              |
| Statistics 13 or 100 or 102.....  | 4            |
| <b>Breadth/General Education</b> .....  | <b>18-24</b> |
| Satisfaction of General Education requirements; additional units in social sciences and humanities to total 24 units.   |              |
| <b>Depth Subject Matter</b> .....   | <b>24-27</b> |
| Written expression (in addition to college requirement), University Writing Program 101, 104A, 104B, 104C, 104D, 104E, or 104F .....  | 4            |
| Agricultural and Resource Economics 147 or 148.....   | 3-4          |
| Atmospheric Science 60 or Environmental and Resource Sciences 131 .....   | 3-4          |
| Soil Science 100.....   | 4            |
| Environmental and Resource Sciences 100 or 121 .....  | 3-6          |
| Agricultural Management and Rangeland Resources 101, Environmental Science and Policy 161, 179; Environmental Toxicology 138, Geology 134, Nature and Culture 120, Political Science 107, 171 or Wildlife, Fish, and Conservation Biology 154.....  | 3-4          |
| Agricultural Management and Rangeland Resources 130, Entomology 104, Environmental and Resource Sciences 144, Environmental Science and Policy 100, Evolution and Ecology 101, or Plant Biology 117 or 142.....   | 3-4          |
| Atmospheric Science 192 .....   | 3            |
| Areas of Specialization (choose one)  |              |
| <b>Air Resource Option</b> .....  | <b>26-28</b> |
| Directed towards a general understanding of the atmosphere as a finite resource and of environmental problems currently faced by humankind. The option provides a broad understanding of the physical and chemical properties of the atmosphere, including the impacts of air pollution and global climate change. Employment opportunities include positions within federal, state, and county agencies concerned with environmental quality and with private companies. |              |
| Atmospheric Science 30, 110, 116, 124, 133 .....  | 16           |
| Environmental Science and Policy 110.....   | 4            |
| Choose two from Atmospheric Science 115, 149, 160; Environmental and Resource Sciences 131, 173, 185, 186; or Environmental Science and Policy 116 .....  | 6-8          |

**Unrestricted electives (to total 180)**.....25-52

**Environmental Resources Option** .....

For the general study of the physical, chemical and biological features of renewable natural resources, and the economic and social considerations associated with their use, protection and management. For those who plan careers associated with resource utilization and management, and those pursuing post-baccalaureate, academic, or professional training.

Choose at least two from Soil Science 111, 112, 118; Geology 130, 134 .....

Choose at least two from Atmospheric Science 116, 124, 133, 160; Environmental Toxicology 131, 138.....

Choose at least two from Agricultural Management and Rangeland Resources 132; Environmental and Resource Sciences 136, 144, 173, 185, 186; Geology 135; Hydrologic Science 134, 141, 145 .....

**Unrestricted electives (to total 180)**.....25-60

**GIS and Remote Sensing Option** .....

Conceptual and practical training in the application of remote sensing technology and geographical information systems to natural resource assessment and to monitoring human impacts on the environment. Appropriate training for those seeking employment as GIS specialists with natural resource management agencies or environmental consulting firms.

Environmental and Resource Sciences 105, 185, 186; Applied Biological Systems Technology 180, 182, Landscape Architecture 185 .....

**Unrestricted Electives (to total 180)**.....25-52

**Hydrobiology Option** .....

Training in the biological aspects of water resources focusing on the understanding and protection of polluted and unpolluted water systems; the structure, function, and principles of aquatic systems. Graduates may seek employment with state and federal agencies such as Water Resources Control Board, Department of Fish and Game, Department of Water Resources, or consulting firms concerned with environmental impacts.

Choose 28-35 units from Entomology 116; Environmental and Resource Sciences 136; Environmental Science and Policy 123, 124, 151, 155; Environmental Toxicology 101; Geology 116, 135, 139; Hydrologic Science 134, 141; Plant Biology 118, 178; Wildlife, Fish, and Conservation Biology 120, 120L, 123, 153 .....

**Unrestricted Electives (to total 180)**.....16-50

**Land and Water Management Option**.....

A broad background in management of soil and water resources in both natural and agricultural ecosystems. Emphasis on analysis of soils and plants for estimating crop nutrient requirements and principles of irrigation and drainage of agricultural land. Appropriate for those seeking employment with state and federal agencies or with agroindustry.

Choose at least two from Soil Science 105, 109, 111, 118, 120 .....

Choose at least two from Hydrologic Science 110, 124, 134, 141, 143, 144 .....

Choose at least one from Agricultural Management and Rangeland Resources 132; Environmental and Resource Sciences 144, 173; Geology 134, 135 .....

**Unrestricted Electives (to total 180).....22-61****Plant Environmental Interactions Option .....22-28**

Provides background in plant functioning and allows integration of biological and environmental science to provide understanding of natural and managed ecosystems. (Note: Chemistry 8A, 8B prerequisite to Plant Biology 111 and 112.)

Choose 23-28 units from Agricultural Management and Rangeland Resources 130, 131; Atmospheric Science 133; Environmental and Resource Sciences 144, 173; Environmental Science and Policy 123, 155; Hydrologic Science 124; Plant Biology 111, 111D, 111L, 112, 112D, 117, 141, 142, 157, 158; Soil Science 109, 111, 112 ..... 23-28

**Unrestricted Electives (to total 180).....23-55****Total Units for the Major ..... 180****New and changed courses in Environmental and Resource Sciences (ERS)****Lower Division Courses****8. Water Quality at Risk (3)**

Lecture—2 hours; discussion—1 hour. Natural and human threats to water quality. Balance of science and policy in all aspects of attaining, maintaining, and managing water quality, water contamination. Decoding popular media coverage of water quality and water contamination. GE credit: SciEng, SocSci, Wrt. (Same course as Science and Society 8.)—II. (II.) Hernes

(new course—eff. winter 06)

**10. California: The State (3)**

(cancelled course—eff. fall 05)

**10G. California: The State (Discussion) (1)**

(cancelled course—eff. fall 05)

**Upper Division Courses****105. Principles of Cartography for GIS (4)**

(cancelled course—eff. fall 05)

**173. Humans and Vegetation Change (4)**

(cancelled course—eff. fall 05)

# Environmental Science and Policy

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## New and changed courses in Environmental Science and Policy (ESP)

### Lower Division Courses

#### 1. Environmental Analysis (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: University Writing Program 1; Economics 1A, 1B, Biological Sciences 1A, Political Science 1, and University Writing Program 102 recommended. Analysis of the biological, physical, and social interactions which constitute environmental problems, such as food production, energy development and conservation, pollution, and the conservation of natural environments. Emphasis on analysis of problems and the consequences of proposed solutions.—II. (II.) Holyoak

(change in existing course—eff. fall 05)

### Upper Division Courses

#### 101. Ecology, Nature, and Society (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Anthropology 1 or 2 or course 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 conservation. (Same course as Anthropology 101.) GE credit: SocSci, Div, Wrt.—II. (II.) Borgerhoff Mulder

(change in existing course—eff. winter 05)

#### 105. Evolution of Societies and Cultures (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Anthropology 1 or 2 or course 30 or Evolution and Ecology 100 or Biological Sciences 101. Interdisciplinary study of social and cultural evolution in humans. Culture as a system of inheritance, psychology of cultural learning, culture as an adaptive system, evolution of maladaptations, evolution of technology and institutions, evolutionary transitions in human history, coevolution of genetic and cultural variation. Only 2 units of credit to students who have completed course 101 or Anthropology 101 prior to fall 2004. (Same course as Anthropology 105.) GE credit: SocSci, Wrt.—III. (III.) McElreath, Richerson

(new course—eff. fall 04)

#### 161. Environmental Law (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: upper division standing and one course in environmental science (course 1, 10, 110, Biological Sciences 1A, Environmental Toxicology 10, or Resource Sciences 100); Political Science 1 and University Writing Program 1 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, Wrt.—III. (III.)

(change in existing course—eff. fall 05)

# Environmental Toxicology

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## New and changed courses in Environmental Toxicology (ETX)

### Lower Division Courses

#### 20. Introduction to Forensic Science (4)

Lecture—3 hours; discussion—1 hour. Basic principles of forensic science and the types of information on which investigations focus, how the information is obtained and how it is used in criminal investigations, types of scientific skills that are required to practice forensic science as a profession, guidance on future training. Real cases will be discussed, and demonstrations of certain methods provided. GE credit: SciEng, Wrt.—III. (III.) Howitt, Rice

(new course—eff. spring 05)

#### 30. Chemical and Drug Use and Abuse (3)

Lecture—3 hours. An overview of chemical use and abuse in our society. The effects of chemicals (therapeutic drugs, pesticides, food additives, herbal remedies, environmental contaminants, and recreational drugs) on humans and other living systems. GE credit: SciEng.—II. (II.) Craigmill

(change in existing course—eff. winter 06)

### Upper Division Courses

#### 104. Environmental and Nutritional Factors in Cellular Regulation and Nutritional Toxicants (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 101; Biological Sciences 103 or Animal Biology 103. Cellular regulation from nutritional/toxicological perspective. Emphasis: role of biofactors on modulation of signal transduction pathways, role of specific organelles in organization/regulation of metabolic transformations, major cofactor functions, principles of pharmacology/toxicology important to understanding nutrient/toxicant metabolism. (Same course as Nutrition 104.)—III. (III.) Oteiza, Rucker

(new course—eff. spring 05)

### Graduate Courses

#### 220. Analysis of Toxicants (3)

Lecture—3 hours. Prerequisite: coursework in organic chemistry. Principles of microanalysis of toxicants. Theoretical considerations regarding separation, detection and quantitative determination of toxicants using chemical and instrumental techniques. (Same course as Forensic Science 220.)—I. (I.)

(change in existing course—eff. winter 06)

#### 260. Immunotoxicology (3)

Lecture—3 hours. Prerequisite: undergraduate or graduate introduction to immunology coursework recommended, but not required; graduate standing or consent of instructor. Provides students with skills and knowledge for evaluating and applying research on the impact of environmental toxicants on immunological function in human and wildlife populations. Offered in alternate years.—(I.) Golub

(new course—eff. fall 05)

#### 270. Toxicology of Pesticides (3)

Lecture—3 hours. Prerequisite: one course each in (a) Organic Chemistry, (b) Biochemistry, (c) Toxicology (course 101 or equivalent), or consent of instructor; graduate standing. Classification and chemical properties of pesticides, their mode of action, metabolism and disposition, pesticide resistance, effects on human health and ecological health and methods of risk benefit analyses. Offered in alternate years.—(II.) Matsumura

(new course—eff. winter 07)

# Epidemiology

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## New and changed courses in Epidemiology (EPI)

### Graduate Courses

#### **228. Quantitative Methods for Epidemiology (4)**

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: Mathematics 16A-B or Mathematics 17A-B or Mathematics 21A-B or equivalent; basic knowledge of the principles of linear algebra, such as those taught in mathematics 22A or the equivalent, is assumed. The application of calculus and linear algebra techniques to epidemiological problems. Topics include applications of derivatives, integration, exponentials and logarithms, multivariable calculus, infinite series, and vector and matrix algebra, with examples and problems taken from epidemiology and related subjects.—I. (I.) Harvey  
(new course—eff. fall 05)

#### **272. Cancer Epidemiology (2.0)**

Recitation—1 hour; discussion—1 hour. Prerequisite: must have basic understanding of epidemiologic and statistical concepts that are covered in courses 205A, 205B, 206 (may be taken concurrently), and Statistics 102. We will cover the underlying concepts essential to understanding cancer epidemiology, such as trends in incidence and survival, epidemiologic methods used to assess cancer etiology, prevention and control, and an introduction to the cancer initiation and progression multi-stage model.—II. (II.) Butler, Cress  
(new course—eff. winter 05)



# Evolution and Ecology

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## Change in Evolution and Ecology Major

The major program in Evolution and Ecology has changed its name to Evolution, Ecology and Biodiversity.

## New and changed courses in Evolution, Ecology and Biodiversity (EVE)

### Lower Division Courses

#### 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 sea life, including humans. Limited enrollment. GE credit: SciEng, Wrt.—III. (III.) Williams

(new course—eff. spring 06)

### Upper Division Courses

#### 107. Animal Communication (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 1B; Animal Behavior course (Neurobiology, Physiology, and Behavior 102, Psychology 101, Animal Science 104, Entomology 104, or equivalent). How animals use songs, dances, colors, chemicals, electricity and vibrations to communicate. Mechanisms of signal production and detection (sensory systems), theory of information transfer and signal design, and the role of natural selection in shaping communication.—I. (I.) Patricelli

(new course—eff. fall 05)

#### 150. Evolution of Animal Development (3)

Lecture—3 hours. Prerequisite: molecular and cellular biology 150 or 163 or equivalent course in developmental biology; may be waived for graduate students with consent of instructor. Comparative analysis of animal development and the genetic basis of morphological diversification. Offered in alternate years.—II. Kopp

(new course—eff. winter 05)

### Graduate Courses

#### 220. Species and Speciation (3)

Lecture—2 hours; discussion—1 hour. Prerequisite: course 100, Philosophy 108 or the equivalent; History and Philosophy of Science 130B recommended. Current status of species concepts, models of speciation, current research on speciation, and relevance of species to conservation biology. Offered in alternate years.—II. Shapiro

(new course—eff. winter 05)

#### 231. Principles of Biological Data Analysis (3)

Lecture—2 hours; laboratory—3 hours. Introduction to the principles of data analysis, experimental design, statistical modeling, inference, and hypothesis tests. Statistical methods of particular importance in biological applications will be emphasized. Examples will be presented from the fields of ecology and evolutionary genetics. (S/U grading only.)—II. (II.) Rannala

(new course—eff. winter 06)

# Fiber and Polymer Science

## Changes in B.S. Major Requirements for Fiber and Polymer Science Major

|   | UNITS        |
|---|--------------|
| <b>English Composition Requirement</b> .....  | <b>7-12</b>  |
| See College requirement.....  | 0-8          |
| Communication 1 .....   | 4            |
| University Writing Program 104A, 104B, 104C, 104D, 104E, or 104F .....  | 3            |
| <b>Preparatory Subject Matter</b> .....   | <b>52-55</b> |
| Chemistry 2A-2B-2C .....  | 15           |
| Computer Science Engineering 15 or 30 .....   | 4            |
| Mathematics 16A-16B-16C or 21A-21B-21C .....  | 9-12         |
| Physics 7A-7B-7C or 9A-9B-9C .....  | 12           |
| Statistics 13 or Agricultural Management and Rangeland Resources 120 .....  | 4            |
| Textiles and Clothing 6 and 8 or Engineering 45 .....   | 8            |
| <b>Breadth/General Education</b> .....  | <b>6-24</b>  |
| Satisfaction of General Education requirement; See advising office for breadth requirement.   |              |
| <b>Depth Subject Matter</b> .....   | <b>37</b>    |
| Textiles and Clothing 163, 163L .....   | 4            |
| Fiber and Polymer Science 100, 150, 161, 161L, 180A, 180B .....   | 14           |
| Chemistry 128A, 128B, 128C, 129A, 129B, 110A and 110C or 107A and 107B .....  | 19           |
| <b>Restricted Electives</b> .....   | <b>30</b>    |
| Select courses from the following:  |              |
| <i>Computer Science and Mathematics:</i> Agricultural Management and Rangeland Resources 21; Engineering 5; Applied Science Engineering 115, 116; Food Science and Technology 156; Mathematics 22A, 22B |              |
| <i>Chemistry:</i> Chemistry 108, 111, 115, 120, 121, 124A, 124B, 124C, 130, 131, 140  |              |
| <i>Marketing/Management:</i> Agricultural and Resource Economics 100A, 100B, 113, 136, 157, Economics 1A, 1B, Statistics 103  |              |
| <i>Material and Advanced Fiber/Polymer Science:</i> Aeronautical Science Engineering 137, Engineering 104A, 104B, Textiles and Clothing 250A-F, 290, 293  |              |
| <i>Textiles:</i> Textiles and Clothing 162, 162L, 164, 165, 173, 174  |              |
| <b>Unrestricted Electives</b> .....   | <b>23-40</b> |
| <b>Total Units for the Degree</b> .....   | <b>180</b>   |

## Changes in Minor Requirements for Fiber and Polymer Science Minor

|  | UNITS     |
|--|-----------|
| <b>Fiber and Polymer Science</b> .....   | <b>18</b> |
| Textiles and Clothing 6 or Engineering 45 .....  | 4         |
| Courses selected from the following:   |           |
| Fiber and Polymer Science 100, 150, 161, 161L, 180A and 180B; and Textiles and Clothing 163 and 163L |           |

# Film Studies

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## New and changed courses in Film Studies (FMS)

### Upper Division Courses

#### 142. New German Cinema (4)

Lecture/discussion—3 hours. German filmmakers of the 1960s-1980s such as Fassbinder, Herzog, Syberberg, Brückner, Schlöndorf, Kluge, Wenders. Knowledge of German not required. May be repeated for credit with consent of instructor. (Same course as German 142) GE credit: ArtHum, Wrt.—I. (I.) Fisher  
(new course—eff. winter 06)

# Food Science

## Changes in B.S. Major Requirements for Food Science Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>0-8</b>   |
| See College requirement  |              |
| <b>Preparatory Subject Matter</b> .....  | <b>52-66</b> |
| University Writing Program 102F, 104A or 104E (if not<br>already taken to satisfy college English requirement) .....   | 4            |
| Communication 1 (if not already taken to satisfy college Eng-<br>lish Requirement).....  | 4            |
| Mathematics 16A-16B-16C .....  | 9            |
| Biological Sciences 1A, 1C .....   | 10           |
| Chemistry 2A-2B-2C.....  | 15           |
| Organic chemistry (see option for requirement)   |              |
| Physics 7A-7B-7C.....  | 12           |
| Food Science and Technology 1 and/or 10; both recom-<br>mended, but not required .....   | 3-6          |
| Food Science and Technology 50.....  | 3            |
| Nutrition 10 (or approved substitute) .....  | 3            |
| <b>Breadth/General Education</b> .....   | <b>24</b>    |
| Satisfaction of General Education requirement plus social sci-<br>ence and humanities electives to total 24 units  |              |
| <b>Depth Subject Matter</b> .....  | <b>50</b>    |
| Biological Sciences 102, 103 .....   | 6            |
| Agricultural Management and Rangeland Resources 120.....   | 4            |
| Food Science and Technology 100A, 100B, 101A, 101B,103,<br>104, 104L, 160, 190 .....   | 28           |
| Food Science and Technology 110A-110B, Applied Biological<br>Systems Technology 110L.....  | 8            |
| Food Science and Technology 127 or 107 .....   | 4            |
| <b>Select one of the following five options:</b>   |              |
| <b>Food Technology Option</b>  |              |
| The Food Technology option provides a broad exposure to food<br>chemistry, food microbiology, food engineering and food processing.<br>Students find positions in quality assurance, product development,<br>and food processing in the food industry. |              |
| <b>Specific course requirements</b> .....  | <b>11</b>    |
| Chemistry 8A-8B.....   | 6            |
| Food Science and Technology 108, 109.....  | 5            |
| <b>Selected additional courses</b> .....   | <b>15</b>    |
| Select courses from a master list available from the department<br>Advising Center.  |              |

## Food Business and Management Option

The Food Business and Management option allows students to integrate study of the science and technology of food with that of business and economics in a unique program. Students prepare for positions of management in small food companies, and research-and-development oriented marketing or technical sales opportunities in corporate food industries.

|  |           |
|--|-----------|
| <b>Specific course requirements</b> .....          | <b>24</b> |
| Chemistry 8A-8B.....                               | 6         |
| Economics 1A .....                                 | 4         |
| Agricultural and Resource Economics 112, 113 ..... | 8         |
| Management 100.....                                | 3         |
| Food Science and Technology 109.....               | 3         |

**Selected additional courses** .....

Select courses from a master list available from the department  
Advising Center.

## Consumer Food Science Option

The Consumer Food Science option prepares students for jobs in food product formulation, research-and-development oriented marketing and sensory analysis, quality assurance, extension service, creative writing, and community service. Students who fulfill the requirements for the teaching credential teach elementary or secondary school home economics.

|  |           |
|--|-----------|
| <b>Specific course requirements</b> .....              | <b>19</b> |
| Chemistry 8A-8B.....                                   | 6         |
| Food Science and Technology 47, 109, 159.....          | 6         |
| Additional Food Science and Technology 107 or 127..... | 4         |
| Consumer Science 100.....                              | 3         |

**Selected additional courses** .....

Select courses from a master list available from the department  
Advising Center.

## 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. The option exposes the students to a diversity of coursework, including chemistry, biochemistry, microbiology and engineering as they pertain to the malting and brewing processes. Issues of quality assurance, plant sanitation and packaging are also key. Of course, there is a thorough grounding in malting and brewing.

|  |              |
|--|--------------|
| <b>Specific course requirements</b> .....  | <b>26-29</b> |
| Chemistry 8A, 8B.....  | 6            |
| Food Science and Technology 3 (recommended but not<br>required) .....              | 3            |
| Food Science and Technology 102A, 102B, 108, 109, 123,<br>131 .....                | 20           |
| Selected additional courses .....  | 9            |
| Select courses from a master list available from the department<br>Advising Center |              |

**Food Biology/Microbiology Option**

The Food Biology/Microbiology option is for students interested in research and development careers with food companies or government laboratories, in teaching and research at academic institutions, or in professional (medical, veterinary, pharmacy, optometry or dental) school. This option prepares students for graduate study and research in several areas, including food science, biochemistry, biotechnology, microbiology, and post-harvest biology.

**Specific course requirements ..... 18-24**

Biological Sciences 1B .....5  
 Chemistry 8A-8B or 118A-118B-118C..... 6-12  
 Microbiology 102, 102L .....7  
 Selected additional courses .....10  
 Select courses from a master list available from the department Advising Center.

**Food Biochemistry Option**

The Food Biochemistry option prepares students for graduate study and research in food science, biochemistry, biotechnology, microbiology, pharmacology, post-harvest biology, and commodity emphasis. The program is designed for students interested in graduate or professional school, leading to careers in research in universities, food companies or government laboratories or in teaching at academic institutions. The option can also serve to prepare students for professional schools such as pharmacy, optometry, dentistry, public health or medicine.

**Specific course requirements ..... 31**

Biological Sciences 1B .....5  
 Biological Sciences 104 .....3  
 Chemistry 118A-118B-118C.....12  
 Chemistry 107A, 107B .....6  
 Food Science and Technology 123, 123L.....5

**Selected additional courses ..... 9**

Select courses from a master list available from the department Advising Center

**Food Chemistry Option**

The Food Chemistry option prepares students for graduate study and research in such areas as flavor chemistry, food additive chemistry, biotechnology, biochemistry and toxicology. This option is for students interested in research and development careers with food companies or government laboratories, in teaching and research at academic institutions, or in professional (medical, veterinary, or dental) school.

**Specific course requirements ..... 20-21**

Chemistry 118A-118B-118C or 128A-128B-128C, 129A11-12  
 Chemistry 107A-107B, 124A .....9

**Selected additional courses ..... 10**

Select courses from a master list available from the department Advising Center.

**Unrestricted Electives .....varies by option****Total Units for the Degree..... 180**

## Forensic Science

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### New and changed courses in Forensic Science (FOR)

#### Graduate Courses

##### **210. Personal Identification Methods in Forensic Science (3)**

Lecture—3 hours. Prerequisite: restricted to students enrolled in the M.S. Forensic Science Program or consent of instructor. Methods for identifying individuals from evidence collected at crime scenes, suspects or victims, crime scene examination and analytical methods used to support such investigations. Topics include forensic anthropology and odontology; latent prints; shoe prints; facial reconstruction/recognition; eyewitness identifications; biometric systems. Offered in alternate years.—(III.) Howitt

(change in existing course—eff. spring 03)

##### **220. Analysis of Toxicants (3)**

Lecture—3 hours. Prerequisite: coursework in organic chemistry. Principles of microanalysis of toxicants. Theoretical considerations regarding separation, detection and quantitative determination of toxicants using chemical and instrumental techniques. (Same course as Environmental Toxicology 220.)—I. (I.)

(change in existing course—eff. winter 06)

##### **290. Seminar in Forensic Science (1)**

Seminar—3 hours. Students will be exposed to topical areas in Forensic Science by presentations conducted by expert guest speakers. The seminar will also serve as a medium whereby the exiting students will present the research conducted as part of their thesis requirement. May be repeated for credit when topic differs. Restricted to students enrolled in the M.S. in Forensic Science Program. (S/U grading only.)—I, III. (I, III.)

(new course—eff. spring 06)

# French

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## New and changed courses in French (FRE)

### Upper Division Courses

#### 105. Advanced French Grammar (4)

Lecture—3 hours; extensive writing or discussion—1 hour.  
Prerequisite: course 23 or the equivalent. Understanding of, and extensive practice with, various grammatical structures in French. Lexical-semantic, morphological, and syntactic analysis.—II. (II.) Anderson

(new course—eff. winter 05)

#### 109. French Phonetics (4)

Lecture/discussion—3 hours; laboratory—1 hour. Prerequisite: course 23 or the equivalent. Introduction to the sound-inventory of French and practice in phonetic transcription, with a focus on ways in which phonetic contrasts signal grammatical contrasts; spoken forms and spelling; formal differences between the 'Standard' and other varieties across the French-speaking world. Offered in alternate years.—III. Anderson

(new course—eff. spring 05)

### Graduate Courses

#### 261. Current Issues in Modern French Syntax (4)

(cancelled course—eff. fall 07)

## Freshman Seminar

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### New and changed courses in Freshman Seminar (FRS)

#### Lower Division Courses

##### 1. Freshman Seminar (1)

Seminar—1-1.5 hours. The investigation of a special topic through shared readings, discussions, written assignments, term papers, and special activities (such as fieldwork, site visits, laboratory work, etc.). Emphasis is placed upon student participation in learning. Open only to students who have completed fewer than 45 quarter units. May be repeated for credit. May take more than one freshman seminar, but not more than one in any given quarter.—I, II, III.

(new course—eff. fall 05)

##### 2. Freshman Seminar (2)

Seminar—2-2.5 hours. The investigation of a special topic through shared readings, discussions, written assignments, term papers, and special activities (such as fieldwork, site visits, laboratory work, etc.). Emphasis is placed upon student participation in learning. Open only to students who have completed fewer than 45 quarter units. May be repeated for credit. May take more than one freshman seminar, but not more than one in any given quarter.—I, II, III.

(new course—eff. fall 05)

##### 3. Freshman Seminar (1)

Seminar—1-1.5 hours. The investigation of a special topic through shared readings, discussions, written assignments, term papers, and special activities (such as fieldwork, site visits, laboratory work, etc.). Emphasis is placed upon student participation in learning. Open only to students who have completed fewer than 45 quarter units. May be repeated for credit. May take more than one freshman seminar, but not more than one in any given quarter. (P/NP grading only.)—I, II, III.

(new course—eff. fall 05)

##### 4. Freshman Seminar (2)

Seminar—2-2.5 hours. The investigation of a special topic through shared readings, discussions, written assignments, term papers, and special activities (such as fieldwork, site visits, laboratory work, etc.). Emphasis is placed upon student participation in learning. Open only to students who have completed fewer than 45 quarter units. May be repeated for credit. May take more than one freshman seminar, but not more than one in any given quarter. (P/NP grading only.)—I, II, III.

(new course—eff. fall 05)



## Genetics (A Graduate Group)

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### New and changed courses in Genetics (GGG)

#### Graduate Courses

**292A. Seminar in Cytogenetics (1-3)**

(cancelled course—eff. spring 05)

**292B. Seminar in Quantitative Genetics (1-3)**

(cancelled course—eff. spring 05)

**292C. Seminar in Developmental Genetics (1-3)**

(cancelled course—eff. spring 05)

**292D. Seminar in Population, Evolutionary and Ecological Genetics (1-3)**

(cancelled course—eff. spring 05)

**294. Seminar in Human Genetics (2)**

Seminar—2 hours. Prerequisite: course 201A and consent of instructor. May be repeated for credit up to five times if topic differs. Topics of current interest in human genetics and genomics. Offered in alternate years.—II. Seldin

(new course—eff. fall 04)

# Geography

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## New and changed courses in Geography (GEO)

### Graduate Courses

#### **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 for undergraduates. Current topics in historical and ecological biogeography, including macroecology and areography, GIS and remote sensing, phylogeography, vegetation, plant and animal community and species geography. Systematics, climate change, and conservation will be addressed. Offered in alternate years.—II. Shapiro

(new course—eff. fall 04)

#### **280. Field Studies in Geography (3)**

Lecture—1 hour; fieldwork—6 hours. Prerequisite: undergraduate or graduate coursework in geography and consent of instructor. 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 two times for credit. Limited enrollment.—III. (III.) Elliott-Fisk

(new course—eff. spring 05)

# Geology

## Changes in B.S. Major Requirements for Geology Major

|  | UNITS          |
|--|----------------|
| <b>Preparatory Subject Matter</b> .....  | <b>57-59</b>   |
| Geology 3, 3L, 50, 50L, 60, 62 .....   | 15             |
| Mathematics 21A-21B-21C .....  | 12             |
| Chemistry 2A-2B .....  | 10             |
| Select one of the following three options:   |                |
| <b>General Geology option:</b>   |                |
| Hydrologic Science 134 or Chemistry 2C .....   | 5-6            |
| Statistics 32 or 102 .....   | 3-4            |
| Physics 7A-7B-7C or 9A-9B-9C .....   | 12             |
| <b>Geochemistry/Petrology option:</b>  |                |
| Hydrologic Science 134 or Chemistry 2C .....   | 5-6            |
| Statistics 32 or 102 .....   | 3-4            |
| Mathematics 21D .....  | 4              |
| Physics 9A-9B .....  | 8              |
| <b>Quantitative/Geophysics option:</b>   |                |
| Mathematics 21D and 22A .....  | 7              |
| Physics 9A-9B-9C .....   | 12             |
| <b>Depth Subject Matter</b> .....  | <b>52</b>      |
| Geology 100, 100L, 101, 101L, 103, 105, 106, 107, 107L, 108, 109, 109L, 110 .....  | 40             |
| Additional upper division electives chosen from Geology 130–190 courses, Hydrologic Science 144, 146 and related fields approved in advance by major adviser. No more than 3 units upper division elective credit for Geology 115–129 courses. Maximum of 6 units upper division elective credit for Geology 192 or 194A-194B or 194HA-194HB. .... | 12             |
| <b>Total Units for the Major</b> .....   | <b>109-111</b> |

## English Composition Requirement

It is recommended that all majors complete the English composition requirement (University Writing Program 101, or 102, or 104, or the equivalent) before or concurrently with the following courses: Geology 100, 101, 105N, 106, 108, 109L, 110.

## Recommended

For those who are intending to pursue a career in geology or who are planning to apply to graduate programs in the earth sciences, one or more of the following courses are recommended for any of the options or specifically to supplement the options as listed. Note that Mathematics 22A is not a necessary prerequisite to Physics 9C: *General Geology option:* Mathematics 21D, 22A, 22B, Physics 9A-9B-9C instead of 7A-7B-7C, Statistics 104, 106, 108.

*Geochemistry/Petrology option:* Mathematics 22A, Physics 9C, Hydrology 134 and Chemistry 2C, Chemistry 110A.

*Quantitative/Geophysics option:* Mathematics 22B, Statistics 32 or 102, Hydrology 134 or Chemistry 2C.

**Major Advisers.** A.B. degree: R.A. Zierenberg; B.S. degree: I.P. Montañez, R.A. Zierenberg, P. Schiffman.

## New and changed courses in Geology (GEL)

### Lower Division Courses

#### 16. The Oceans (3)

Lecture—3 hours. Introductory survey of the marine environment. Oceanic physical phenomena, chemical constituents and chemistry of water, geological history, the seas biota and human utilization of marine resources. Not open for credit to students who have taken course 116. GE Credit: SciEng—II. (II.) Hill  
(new course—eff. fall 07)

#### 16G. The Oceans: Discussion (2)

Discussion/laboratory—2 hours; term paper or discussion. Prerequisite: course 16 (concurrent). 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: SocSci, Wri.—II. (II.) Hill  
(new course—eff. fall 07)

#### 91. Geology of Campus Waterways (1)

Lecture/discussion—1 hour; fieldwork—1 hour. Research characterizing geological processes in waterways on campus including links among hydrologic, atmospheric, physical, and human processes; carbon cycling and interpreting processes from sediments; field research techniques; research project design and implementation; implications of results for society and environmental policy. May be repeated for credit three times. (P/NP grading only) —I, II, III. (I, II, III.) Montanez, Osleger, Sumner  
(new course—eff. winter 06)

### Upper Division Courses

#### 116. The Oceans (3)

(cancelled course—eff. fall 07)

#### 116G. The Oceans: Discussion (2)

(cancelled course—eff. fall 07)

#### 131. Risk: Natural Hazards and Related Phenomena (3)

Lecture—3 hours. Prerequisite: upper division standing. Risk, prediction, prevention and response for earthquakes, volcanic eruptions, landslides, floods, storms, fires, impacts, global warming. Offered in alternate years.—II. Turcotte  
(new course—eff. winter 06)

#### 136. Ecogeomorphology of Rivers and Streams (5)

Discussion/laboratory—2 hours; lecture—1 hour; fieldwork; term paper or discussion. Prerequisite: upper division or graduate standing in any physical science, biological science, or engineering, and consent of instructor. 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 wilderness settings with students from diverse scientific backgrounds. Restricted to advanced students in the physical sciences, biological sciences, or engineering. No repeat credit. (Deferred grading only, pending completion of sequence.)—III, VI. Mount, Moyle  
(new course—eff. spring 05)

**142. Basin Analysis (3)**

Laboratory—3 hours; lecture—2 hours. Prerequisite: courses 50, 50L, and 109. Analysis of sedimentary basins from initiation to maturity, including controls on sedimentary fill, subsidence analysis, sequence stratigraphy, core logs, and applications to petroleum exploration and hydrology. One two-day field trip. Offered in alternate years.—I. Sumner

(change in existing course—eff. fall 05)

**146. Isotopic Geochemistry (3)**

Lecture—3 hours. Prerequisite: Chemistry 2C or consent of instructor. Principles and applications of nuclear chemistry to geology. Methods of determining geologic ages using K-Ar, Rb-Sr, Nd-Sm, and U-Pb isotopes. The interpretation of apparent ages determined by isotopic methods. The age and origin of the earth. Offered in alternate years.—(II.) Day

(change in existing course—eff. fall 05)

**Graduate Courses**

**261. Paleobiology Graduate Seminar 1: Evolutionary aspects (3)**

Lecture—1 hour; seminar—2 hours. Prerequisite: graduate standing in Geology or a biological science; qualified undergraduates accepted on an exception-only basis. This course will treat one or more of several topics in paleobiology from a phylogenetic perspective, including major patterns in evolution, building the tree of life, extinction and phylogeny, phylogeny of major phyla, and the relation between taxonomy and phylogeny. May be repeated for credit when topic varies. Carlson, Motani, Vermeij

(new course—eff. winter 06)

**293. Geologic Event of the Week (1)**

Discussion—.5 hours; seminar—.5 hours. Prerequisite: graduate standing. Seminar/discussion group to review and discuss recent earthquakes, volcanic eruptions, and other significant geologic events. The focus is on understanding the available observations, the physical processes behind each event, the geological setting, and societal consequences. May be repeated for credit three times for up to three units. (S/U grading only.)—I. II. III. (I. II. III.) Kellogg

(new course—eff. spring 05)

# German

## New and changed courses in German (GER)

### Lower Division Courses

#### 6. Conversational German (4)

Discussion—3 hours; term paper. Prerequisite: course 3. Course 6 may be taken concurrently with course 20. Designed to develop intermediate language skills with special emphasis on communication and grammatical accuracy.—I, III. Chair

(change in existing course—eff. spring 05)

#### 20. Intermediate German (4)

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 3; may be taken concurrently with course 6. Review of grammatical principles by means of written exercises; expanding of vocabulary through readings of modern texts. Not open for credit to students who have completed course 4. (Former course 4.)—I, II. (I, II.)

(change in existing course—eff. spring 05)

#### 21. Intermediate German (4)

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 20. Review of grammatical principles by means of written exercises; expanding of vocabulary through readings of modern texts.—I, II. (I, II.)

(change in existing course—eff. spring 05)

#### 22. Intermediate German (4)

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 21. Review of grammatical principles by means of written exercises; expanding of vocabulary through readings of modern texts.—II, III. (II, III.)

(change in existing course—eff. spring 05)

#### 40. Great German Short Stories (in English) (4)

Lecture/discussion—3 hours; extensive writing. Major German short stories from Goethe at the end of the eighteenth century to Thomas Mann at the beginning of the twentieth century. Offered in alternate years. GE Credit: ArtHum, Div, Wri.—III. Bernd

(new course—eff. fall 05)

#### 47. Erasmus and Christian Humanism (4)

(cancelled course—eff. fall 04)

### Upper Division Courses

#### 101A. Survey of German Literature, 800-1800 (4)

Lecture/discussion—3 hours. Prerequisite: course 22. German literature from the Middle Ages to Classicism (800-1800) with an overview of major movements and authors. GE credit: ArtHum—I. (I.) Bernd

(change in existing course—eff. winter 04)

#### 101B. Survey of German Literature, 1800-Present (4)

Lecture/discussion—3 hours. Prerequisite: course 22. German literature from the Age of Romanticism (1800) to the present with an overview of major movements and authors. GE credit: ArtHum—II. (II.) Bernd

(change in existing course—eff. winter 05)

#### 105. The Modern German Language (4)

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 22. Introduction to the linguistic analysis of contemporary German, including its phonology, morphology, syntax and semantics, as well as sociolinguistic considerations. GE credit: ArtHum, Wrt.—I. (I.) Arnett

(change in existing course—eff. spring 05)

#### 109A. Business German (4)

Lecture/discussion—3 hours; laboratory—1 hour. Prerequisite: course 22 or consent of instructor. Specialized language course using business-oriented information and publications as the basis for discussions, roleplay, reports, compositions and translations. Offered in alternate years.—II. Henderson

(change in existing course—eff. spring 05)

#### 109B. Advanced Business German (4)

Lecture/discussion—3 hours; laboratory/discussion—1 hour. Prerequisite: course 22 or consent of instructor. Specialized advanced language course providing in-depth study of major business topics with the help of authentic texts and videos. Offered in alternate years.—(II.) Henderson

(change in existing course—eff. spring 05)

#### 113. Goethe's Faust (4)

Discussion—3 hours; term paper. Knowledge of German not required. Intensive study of Goethe's Faust in its entirety. Discussions and readings in English; reading the text in the original is encouraged. (Same course as Humanities 113) Offered in alternate years. GE credit: ArtHum, Div, Wrt.—II, III. Bernd

(change in existing course—eff. spring 06)

#### 118D. Germany Between 1949 and 1989: Division and Restoration (4)

(cancelled course—eff. fall 04)

#### 118E. Contemporary German Culture (4)

Lecture/discussion—3 hours. Prerequisite: course 22. The political, economic, social and cultural scene of Germany today. Offered in alternate years. GE credit: ArtHum, Wrt.—II.

(change in existing course—eff. fall 01)

#### 122. Reformation and Baroque (4)

Lecture/discussion—3 hours; term paper. Prerequisite: course 22. Exemplary literary works of the 16th and 17th centuries tracing the principal lines of development and showing the reflection in literature of the social, as well as religious, scenes. Offered in alternate years. GE credit: ArtHum.—I. Bernd

(new course—eff. fall 04)

#### 122A. Humanism and Reformation (4)

(cancelled course—eff. fall 04)

#### 122B. The Literary Baroque (4)

(cancelled course—eff. fall 04)

#### 140. German Political Literature from the Middle Ages to the Present (4)

(cancelled course—eff. fall 04)

#### 142. New German Cinema (4)

Lecture/discussion—3 hours. German filmmakers of the 1960s-1980s such as Fassbinder, Herzog, Syberberg, Brückner, Schlöndorff, Kluge, Wenders. Knowledge of German not required. May be repeated for credit with consent of instructor. (Same course as German 142) GE credit: ArtHum, Wrt.—I. (I.) Fisher

(change in existing course—eff. winter 06)

#### 145. The Literature of Deviance: Mann, Hesse, Kafka (4)

(cancelled course—eff. winter 05)

**197I. Tutoring in German (1-4)**

Tutorial—3-12 hours. Prerequisite: consent of German Program Director. Tutoring in undergraduate courses including leadership in small voluntary discussion groups affiliated with department courses. May be repeated up to eight units of credit (P/NP grading only.)

(change in existing course—eff. fall 04)

# Hebrew

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## New and changed courses in Hebrew (HEB)

### Lower Division Courses

#### 21. Intermediate Mod Hebrew I (5)

Lecture/discussion—5 hours. Prerequisite: course 3 or consent of instructor. Development and refinement of grammar, composition, and language skills required for reading literary texts and conversing about contemporary topics at an advanced level. History of the Hebrew language. Not open to students who have taken courses 100 or 100A.—I. (I.)

(new course—eff. fall 05)

#### 22. Intermediate Modern Hebrew II (5)

Lecture/discussion—5 hours. Prerequisite: course 21 or consent of instructor. Continued development and refinement of grammar, composition, and language skills required for reading literary texts and conversing about contemporary topics at an advanced level. History of the Hebrew language. Not open to students who have taken course 101 or 100B.—II. (II.)

(new course—eff. winter 06)

#### 23. Intermediate Modern Hebrew III (5)

Lecture/discussion—5 hours. Prerequisite: course 22 or consent of instructor. Continued development and refinement of grammar, composition, and language skills required for reading literary texts and conversing about contemporary topics at an advanced level. History of the Hebrew language. Further development of writing and translating skills. Not open to students who have taken course 100C or 102.—III. (III.)

(new course—eff. fall 05)

### Upper Division Courses

#### 100A. Advanced Modern Hebrew I (4)

(cancelled course—eff. spring 06)

#### 100AN. Advanced Modern Hebrew I (4)

Lecture/discussion—3 hours; term paper. Prerequisite: course 23 or consent of instructor. Students who have taken course 100A as 2nd year Hebrew may take course 100AN. Third year Hebrew. Advanced grammar and composition. Focus on reading of literary texts, oral skills and accuracy in writing.—I. (I.)

(new course—eff. fall 06)

#### 100B. Advanced Modern Hebrew II (4)

(cancelled course—eff. spring 06)

#### 100BN. Advanced Modern Hebrew II (4)

Lecture/discussion—3 hours; term paper. Prerequisite: course 100AN 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.—II. (II.)

(new course—eff. winter 06)

#### 100C. Advanced Modern Hebrew III (4)

(cancelled course—eff. spring 06)

#### 100CN. Advanced Modern Hebrew III (4)

Lecture/discussion—3 hours; term paper. Prerequisite: course 100BN. 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.—III. (III.)

(new course—eff. spring 06)

# History

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## New and changed courses in History (HIS)

### Lower Division Courses

#### 7. Ethnicity, Race and Identity in Latin America (4)

(cancelled course—eff. fall 04)

### Upper Division Courses

#### 115E. The African Slave Trade (4)

Lecture—3 hours; writing—1 hour. History of the African Slave trades, from the early Egyptian and Saharan trades in the pre-modern period to the trans-Atlantic trade (15th-19th century) and the contemporary trafficking of humans. GE credit: ArtHum, Div, Wrt.—III. (III.) Lawrance

(new course—eff. fall 05)

#### 159. Women and Gender in Latin American History (4)

Lecture—3 hours; extensive writing. Prerequisite: one course either on Latin America or in women's history in another world area. 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. GE credit: ArtHum, Div, Wrt.—III. (III.)

(new course—eff. fall 04)

#### 190A. Middle Eastern History I: The Rise of Islam, 600-1000 (4)

Lecture—3 hours; extensive writing. Prerequisite: course 6 recommended. Middle Eastern history from the rise of Islam to the disintegration of the Abbasid Caliphate; the formative centuries of a civilization. Politics and religion, conquest and conversion, arts and sciences, Christians, Jews and Muslims, gender and sexuality, orthodoxy and heterodoxy. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt.—I. Tezcan

(new course—eff. spring 04)

#### 190B. Middle Eastern History II: The Age of the Crusades, 1001-1400 (4)

Lecture—3 hours; extensive writing. Prerequisite: course 6 recommended. Middle Eastern history during the age of the Crusades and Mongol invasions. The idea of holy war, the Crusades, the Mongols as the bearers of Chinese arts, nomads and sedentary life, feudalism, mysticism, slavery, women in the medieval Middle East. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt.—I. Tezcan

(new course—eff. fall 04)

#### 190C. Middle Eastern History III: The Ottomans, 1401-1730 (4)

Lecture—3 hours; extensive writing. Prerequisite: course 6 recommended. Middle Eastern history from the foundation of the Ottoman Empire on the borderlands 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.—II. Tezcan

(new course—eff. winter 05)

## Graduate Courses

#### 201A-N, P-Q, S-T, X. Sources and General Literature of History (4)

Seminar—3 hours; term paper. Prerequisite: consent on instructor. Designed primarily for students preparing for higher degrees in history. (A) Ancient; (B) Medieval; (C) Renaissance and Reformation; (D) Early Modern Europe; (E) Europe since 1815; (F) China to 1880; (G) China since 1880; (H) Britain; (I) Latin America since 1810; (J) American History to 1787; (K) United States, 1787-1896 (L) United States since 1896; (N) Modern Japan; (P) African Historiography; (Q) Cross-Cultural Women's History; (S) History of Science and Medicine; (T) Jewish History; (X) World History. May be repeated for credit when different subject area is studied.

(new course—eff. winter 05)



# Human Development

## Changes in B.S. Major Requirements for Human Development Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>12</b>    |
| See College requirement.....   | 0-8          |
| Choose from University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, 104F.....  | 4            |
| <b>Preparatory Subject Matter</b> .....  | <b>39-47</b> |
| Two courses from Anthropology 1, 2, or 15.....   | 8-9          |
| One course from Biological Sciences 1A, 10, Microbiology 10, or Neurobiology, Physiology, and Behavior 12 .....  | 3-5          |
| One course from Molecular and Cellular Biology 10 or Biological Sciences 101† .....  | 4            |
| History 17A, 17B, 72A, 72B, or Political Science 1 .....   | 4            |
| Two courses from Philosophy 5, 30, 31, 32, or 38.....  | 8            |
| One course from History 17A, 17B, 72A, 72B, or Political Science 1 .....   | 4            |
| Two courses from Philosophy 5, 30, 31, 32, or 38.....  | 8            |
| One course from Neurobiology, Physiology, and Behavior 10, 101, or Psychology 101 .....  | 4-5          |
| Psychology 1 .....   | 4            |
| Psychology 41 or Sociology 46A and 46B, or Statistics 10 or 13 .....   | 4-8          |
| <b>Breadth/General Education</b> .....   | <b>16-24</b> |
| Satisfaction of General Education requirement .....  | 12           |
| <b>Depth Subject Matter</b> .....  | <b>50-55</b> |
| Human Development 100A, 100B, 100C.....  | 12           |
| Human Development 120 or 121.....  | 4            |
| Biological Sciences 101†, Human Development 117, 180, Nutrition 101, 111AV or Psychology 121.....  | 3-5          |
| Human Development 102, 110, 130, 160, or 162* .....  | 4            |
| Human Development 101, 103, 132, or 163* .....   | 4            |
| Human Development 140-140L, or 141 or 142 or 143* ...  | 4-6          |
| <b>Restricted Electives</b> .....  | <b>19-20</b> |
| Five additional upper division courses chosen from among Human Development courses or from a list of restricted electives in consultation with faculty adviser. May include one practicum. |              |
| <b>Unrestricted Electives</b> .....  | <b>54-67</b> |
| <b>Total Units for the Degree</b> .....  | <b>180</b>   |

† Biological Sciences 101 cannot be used to satisfy both the Preparatory Subject Matter and the Depth Subject Matter Requirements.

\* At least one course from among these groupings must focus on childhood/adolescence (101, 102, 103, 110, 130, 132) and one must focus on adulthood/aging (117, 143, 160, 162, 163).

## Changes in Minor Requirements for Human Development Minor

|   | UNITS        |
|---|--------------|
| <b>Aging and Adult Development</b> .....  | <b>21-26</b> |
| Human Development 100C, 117, 143, 160, 162, or 163 15-18  |              |
| Select two courses from the following: Human Development 110, 180; Community and Regional Development 173; Psychology 121, 123, 126, 155; Sociology 127 ..... | 6-8          |
| <b>Human Development</b> .....  | <b>20</b>    |
| Human Development 100A and 100B.....  | 8            |
| Human Development 100C or 110 .....   | 4            |
| Two courses from Human Development 101, 102, 103, 130, 132, or 163.....   | 8            |

## New and changed courses in Human Development (HDE)

### Lower Division Courses

#### 15. Family and the Life Cycle (4)

(cancelled course—eff. fall 06)

### Upper Division Courses

#### 132. Individual and Group Differences in Cognition (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 100B or consent of instructor. Neurodevelopmental substrates and educational implications for individual and group differences in cognition which impact learning disabilities, memory, intelligence, genius and creativity. Group differences in cognition as well as individual case studies will be discussed.—II, III. (II, III.) Kraft

(change in existing course—eff. fall 05)

#### 151. Shared Child Care (4)

(cancelled course—eff. fall 06)

### Graduate Courses

#### 220. Research Methods in Human Growth and Development (4)

Lecture—4 hours. Prerequisite: Statistics 13 or the equivalent and at least two upper division courses in Human Biology or Developmental Psychology. Overview of qualitative and quantitative approaches to empirical inquiry in the social sciences, with a focus on theory and research methods in biological growth and cognitive and social/emotional development from prenatal period to death.—II. (II.)

(change in existing course—eff. fall 05)

#### 225. Behavioral Development and Food Intake (4)

(cancelled course—eff. fall 06)

#### 241. Consultation Approaches to Child Development (3)

(cancelled course—eff. fall 06)

#### 291. Research Issues in Human Development (4)

Seminar—4 hours. Prerequisite: graduate standing in the Behavioral Sciences. In-depth presentations of research issues in particular areas of behavioral development.—I, II. (I, II.) Conger, Kraft

(change in existing course—eff. fall 05)

# Humanities

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## New and changed courses in Humanities (HUM)

### Lower Division Courses

#### 1. Humanities Forum (2)

Lecture—2 hours. Reading and discussion of a single work representative of a particular culture, historical period, or genre and significant for its ongoing cultural impact in the humanities, sciences, social sciences, technology, and popular arenas. Attention to provocative implications for contemporary society. May be repeated one time for credit if topic differs. GE credit with concurrent enrollment in HUM 1D.—I, II, III. (I, II, III.)

(new course—eff. spring 05)

#### 92. Internship (1-12)

Internship—3-36 hours. Internships in fields where students can practice their skills. May be repeated for credit. (P/NP grading only.)

(new course—eff. fall 04)

### Upper Division Courses

#### 113. Goethe's Faust (4)

Discussion—3 hours; term paper. Knowledge of German not required. Intensive study of Goethe's Faust in its entirety. Discussions and readings in English; reading the text in the original is encouraged. (Same course as German 113) Offered in alternate years. GE credit: ArtHum, Div, Wrt.—II, III. Bernd

(new course—eff. spring 06)

#### 145. The Literature of Deviance: Mann, Hesse, Kafka (4)

Lecture—3 hours; term paper. Close study of selected prose works of Mann, Hesse, and Kafka as representative of modernism's fascination with social, sexual, and psychological alienation. Attention to the nuanced portrayal of deviance through formal innovations in fiction. Offered in alternate years.

(new course—eff. winter 05)

#### 180. Topics in the Humanities (4)

Lecture/discussion—3 hours; term paper. Analysis of interdisciplinary issues in the Humanities. Topics will vary. May be repeated one time for credit. GE credit: ArtHum, Wrt.

(change in existing course—eff. winter 05)

#### 192. Internship (1-12)

Internship—3-36 hours. Internships in fields where students can practice their skills. May be repeated for credit. (P/NP grading only.)

(new course—eff. fall 04)

### Graduate Courses

#### 292. Graduate Internship (1-15)

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: consent of instructor required. Individually designed supervised internship, off campus, in community or institutional setting. Developed with advice of faculty mentor. May be repeated for credit up to 15 units. (S/U grading only.)

(new course—eff. spring 05)

#### 298. Directed Group Study (1-5)

(S/U grading only.)

(new course—eff. spring 05)

## Hydrologic Sciences (A Graduate Group)

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### New and changed courses in Hydrologic Sciences (HYD)

#### Lower Division Courses

##### 10. Water and Power and Society (3)

Lecture—2 hours; discussion—1 hour. Water resources issues. How water has been used to gain and wield socio-political power. Water resources development in California as related to current and future sustainability of water quantity and quality. Roles of science and policy in solving water problems. (Same course as Science and Society 10.) GE credit: SciEng, SocSci, Wrt.—III. (III.) Fogg

(change in existing course—eff. spring 05)

#### Upper Division Courses

##### 103N. Fluid Mechanics Fundamentals (4)

Lecture—4 hours. Prerequisite: Physics 9B. Fluid mechanics axioms, fluid statics, kinematics, velocity fields for one-dimensional incompressible flow and boundary layers, turbulent flow time averaging, potential flow, dimensional analysis, and macroscopic balances to solve a range of practical problems. (Same course as Biological Systems Engineering 103.)—I. Wallender

(new course—eff. spring 05)

##### 117. Irrigation Water Management (3)

(cancelled course—eff. fall 05)

##### 144. Groundwater Hydrology (4)

Lecture—4 hours. Prerequisite: Mathematics 16B or 21A; Hydrologic Science 103 or Engineering 103 recommended. Fundamentals of groundwater hydrology—occurrence, movement and distribution of groundwater, well-flow systems—well construction, operation and maintenance; groundwater contamination—exploration and quality assessment. (Same course as Biological Systems Engineering 144.) Not open for credit to students who have completed course 145A.—I. (I.) Marino

(change in existing course—eff. spring 06)

#### Graduate Courses

##### 212. Evapotranspiration (3)

(cancelled course—eff. fall 05)

# Immunology

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## **New and changed courses in Immunology (IMM)**

### **Graduate Courses**

#### **201. Introductory Immunology (4)**

Lecture—4 hours. Prerequisite: graduate standing. Comprehensive introduction to the principles of immunology. Limited enrollment.—

I. (I.) Cho, Gershwin, Miller, Rhodes

(change in existing course—eff. fall 06)

# Integrated Studies

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## New and changed courses in Integrated Studies (IST)

### Upper Division Courses

#### **194HA. Special Study for Honors Students (4)**

Independent study—3 hours; seminar—1 hour. Prerequisite: course 9, consent of instructor and completion of 90 units with a minimum GPA of 3.5. A program of research culminating in the writing of a junior honors thesis under the direction of a faculty adviser. May be repeated one time for credit. (Deferred grading only, pending completion of sequence.)—I-II. (I-II.)

(new courses—eff. fall 04)

#### **194HB. Special Study for Honors Students (4)**

Independent study—3 hours; seminar—1 hour. Prerequisite: course 9, consent of instructor and completion of 90 units with a minimum GPA of 3.5. A program of research culminating in the writing of a junior honors thesis under the direction of a faculty adviser. May be repeated one time for credit. (Deferred grading only, pending completion of sequence.)—II. (II.)

(new course—eff. winter 05)

# International Agricultural Development

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## New and changed courses in International Agricultural Development (IAD)

### Upper Division Courses

**110. Agricultural Production Economics (4)**  
(cancelled course—eff. spring 05)

**111. Agricultural Marketing Systems (4)**  
(cancelled course—eff. spring 05)

**162. Field Course in Tropical Ecology and Sustainable Agricultural Development (8)**  
Lecture—20 hours; discussion—10 hours; field work—30 hours.  
Prerequisite: consent of the instructor; Biological Sciences 1C required; course 10 or Biological Sciences 1A or 1B recommended; limited enrollment, acceptance based on academic merit, personal experience, and academic discipline in order to provide a multidisciplinary atmosphere. Course in Panama. Tropical Ecology of various ecosystems; Agricultural systems in Panama; Sustainable agriculture—uniting ecology and agriculture in Panama, language and culture of Panama, trips to Barro Colorado Island (BCI) and ecotourism field trip. GE credit: SciEng, Div, Wrt. (Same course as Pomology 162.)—VI. (VI.) Kraft  
(change in existing course—eff. summer session I 05)

### Professional Courses

**396. Teaching Assistant Training Practicum (1-4)**  
Prerequisite: graduate standing. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)  
(new course—eff. winter 06)

# International Commercial Law

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## New and changed courses in International Commercial Law (ICL)

### Graduate Courses

#### **242. Private International Law (2)**

Lecture/discussion—20 hours. Prerequisite: course 201, law school education or equivalent. How law operates across national borders; emphasis on methods of resolving international disputes. International aspects of jurisdiction, choice of law, enforcement of judgments, choice of forum, service of process, taking of evidence, foreign sovereign immunity, extraterritorial regulation of antitrust, securities and other national laws. Offered in alternate years.—Wolff  
(change in existing course—eff. special session 04)

#### **290. American Legal System Research Seminar (1)**

Seminar—5 hours. Prerequisite: course 201, law school education or equivalent. The American legal system and its structure. Legal research methodologies and presentation with attention to analysis, synthesis, organization, and editing techniques common to legal writing. (S/U grading only.)—Simmons  
(new course—eff. special session 04)

#### **290A. American Legal System Research Seminar (1)**

(cancelled course—eff. special session 04)

#### **290B. American Legal System Research Seminar (1)**

(cancelled course—eff. special session 04)

# International Relations

## Changes in International Relations Major

### The Major Program

Problems of security, development, ethnic conflict, human rights, health, and the environment are increasingly confronted at a global rather than a national level. With its theoretical models and real-world application, the study of international relations is an exciting and highly relevant interdisciplinary major.

**The Program.** Graduation with a major in international relations requires completion of introductory courses in political science, economics, geography, and history. The major also requires fluency in English and a working knowledge (approximately 24 to 30 units of course credits or equivalent fluency) of one other modern language. Students choose one of four tracks that encompass major topical areas in combination with an area studies emphasis: I. World Trade and Development; II. Peace and Security; III. Global Environment, Health, and Natural Resources; IV. Peoples and Nationalities. *Upper division course work for Tracks I, II and III is composed of twelve courses. Students choosing Track IV, Peoples and Nationalities, are required to study or work abroad for a minimum of one quarter; course work is reduced to nine upper division classes in recognition of the experience gained through the education abroad experience.*

**Programs, Internships, and Career Alternatives.** One program of special interest to international relations majors is the Education Abroad Program, which provides insights into the life and culture of other countries. At UC Davis, the Internship and Career Center assists students in obtaining legislative, legal, and business internships. In addition, the UC Davis Washington Center arranges internships and runs a full-credit academic program in Washington, D.C. with a full range of opportunities for International Relations majors (see also the UC Davis Washington Center listing). International relations graduates are prepared for employment in government agencies (such as the Foreign Service), state agencies, international or non-governmental organizations (such as the United Nations), foundations, and companies having interests in international business, trade, or finance. The stringent language requirement of the major program enhances career prospects in jobs which demand knowledge of the language and culture of other countries.

**International Relations Abroad.** International Relations strongly encourages all students to participate in the UC Education Abroad Program; *those who choose to study Track IV, Peoples and Nationalities, must study or work abroad for a minimum of one quarter. A maximum of five courses taken abroad may be applied toward the 12 upper division courses in the International Relations major (nine upper division courses in Track IV).* Courses are selected with the approval of an adviser for the International Relations program.

**Preparatory Requirements.** Before declaring a major in International Relations, students must complete the following courses with a combined GPA of at least 2.50 at the University of California or other four-year school (at least 3.00 for similar courses taken at community college). All courses must be taken for a letter grade.

|  |         |
|--|---------|
| Economics 1B .....                                     | 4 units |
| Geography 10 .....                                     | 3 units |
| History 4C or 10C .....                                | 4 units |
| International Relations 1 or Political Science 3 ..... | 4 units |
| Statistics 13 or Sociology 46B .....                   | 4 units |

### A.B. Major Requirements:

|   | UNITS        |
|---|--------------|
| <b>Preparatory Subject Matter .....</b>   | <b>19-49</b> |
| Economics 1B.....   | 4            |
| Geography 10.....   | 3            |
| History 4C or 10C.....  | 4            |
| International Relations 1 or Political Science 3 .....  | 4            |
| Statistics 13 or Sociology 46B .....  | 4            |
| Note: Economics 1A, Mathematics 16A and 16B are prerequisites for some courses.   |              |
| Foreign language.....   | 0-30         |
| One of the following series in a single language:   |              |
| Chinese 1, 2, 3, 4, 5, and 6 .....  | 30           |
| or Chinese 1CN, 2CN, 3CN .....  | 15           |
| or Chinese 1BL, 2BL, 3BL.....   | 15           |
| French 1, 2, 3, 21, 22.....   | 25           |
| German 1, 2, 3, 20, 21 .....  | 23           |
| Italian 1, 2, 3, 4, 5.....  | 21           |
| or Italian 1, 2, 3, 8A, 8B.....   | 21           |
| Japanese 1, 2, 3, 4, 5, 6 .....   | 30           |
| Russian 1, 2, 3, 4, 5.....  | 23           |
| Spanish 1, 2, 3, 21, 22.....  | 25           |
| or Spanish 31, 32, 33 .....   | 15           |
| Note: The language curricula are subject to change; please check with an adviser for the major. A language not listed above may be substituted only with prior written approval of the International Relations Program Committee. |              |
| <b>Depth Subject Matter.....</b>  | <b>36-48</b> |
| Tracks I, II and II: Twelve upper division courses  |              |
| Track IV: Nine upper division courses   |              |
| Choose one track below:   |              |
| <b>Track I: World Trade and Development</b>   |              |
| (Emphasizes contemporary economic relations of industrialized and developing countries)   |              |
| <i>For Advanced Industrialized Focus:</i>   |              |
| Economics 100 or 104; 101 or 105; 160A-160B,  |              |
| Political Science 123 .....   | 20           |
| Two courses selected from Group A.....  | 8            |
| One course selected from Group B .....  | 4            |
| Four courses to fulfill Area Studies Requirement .....  | 16           |



*For Developing Countries Focus:*

|  |    |
|--|----|
| Economics 115A-115B, 162 .....                         | 12 |
| Political Science 123, 124 .....                       | 8  |
| One course selected from Group A .....                 | 4  |
| Two courses selected from Group B .....                | 8  |
| Four courses to fulfill Area Studies Requirement ..... | 16 |

*Group A courses (Advanced Industrialized Countries):*

Agricultural and Resource Economics 138, Anthropology 127, Community and Regional Development 118, 141, Economics 102, 110B, 116, Geography 155, International Relations 104, Political Science 130, 140, Sociology 138, 139, 141, 183

*Group B courses (Developing Countries):*

Anthropology 122A, 122B, 123BN, 126A, 126B, 127, 135, Community and Regional Development 153A, 153B, Geography 155, International Agricultural Development 103, International Relations 104, Political Science 124, 126, 178, Sociology 138, 141, 145A, 145B

**Track II: Peace and Security**

(Focuses on political and security relationships among states and non-state actors, examining questions of war, peace, alliances, and diplomacy)

|   |    |
|---|----|
| Economics 162 .....   | 4  |
| Political Science 123, 130, 132 .....   | 12 |
| Political Science 120 or 121 .....  | 4  |
| Three additional courses from at least two departments selected from Anthropology 123B, Comparative Literature 157, Economics 116, 122, Geography 143, History 145, 146A, 146B, Philosophy 118, Physics 137, Political Science 112, 124, 126, 131, 140, 145, Sociology 100, 118, 157, Women's Studies 102 ..... | 12 |
| Four courses to fulfill Area Studies Requirement .....  | 16 |

**Track III: Global Environment, Health, and Natural Resources**

(Familiarizes students with new sources of global interdependence such as biodiversity, natural resource conflicts, population growth, and world health)

Note: Some courses shown below have additional prerequisites

|   |   |
|---|---|
| Economics 162 .....   | 4 |
| Anthropology 101 .....  | 4 |
| Environmental Science and Policy 161 or Political Science 122 ..... | 4 |
| Political Science 123 .....   | 4 |

Select two from Agricultural and Resource Economics 147, 175, 176, Anthropology 103, Applied Biological Systems Technology 182, Economics 115A, Environmental Science and Policy 164, Geography 161, International Agricultural Development 170, Nature and Culture 120, Physics 160, Political Science 107, 175 .....

Select two from the following groups .....

*Atmospheric and marine environments:* Atmospheric Science 116, 149, Environmental and Resource Sciences 121, 131, Geology 116, International Relations 131

*Land use and energy supply:* Agricultural Management and Rangeland Resources 101, 150, 160, Anthropology 104N, Community and Regional Development 142, Environmental and Resource Sciences 144, 173, Environmental Science and Policy 167, Geology 130, International Agricultural Development 104, Political Science 171

*Health and human populations:* Anthropology 102, Communication 160, Environmental Science and Policy 121, 126, Environmental Toxicology 101, Internal Medicine—Infectious Diseases 141, Nutrition 111, 118, 120B, Sociology 170; Epidemiology and Preventive Medicine 198 and 199 may be taken with the director's approval

Four courses to fulfill Area Studies Requirement .....

**Track IV: Peoples and Nationalities**

(Examines social and cultural foundations of national development and international relations)

Select one course from Anthropology 123BN, Sociology 118, 156, 181 .....

Select one course from Anthropology 130A, 102 .....

Select one course each from three of the following four groups .....

*The Mixing of Peoples:* Anthropology 123B, 130BN; Community and Regional Development 176; International Relations 104; Political Science 126

*Women:* Anthropology 126B; Human Development 103; Sociology 145B; Women's Studies 102, 182

*Religion:* Anthropology 124; Philosophy 105; Religious Studies 168, 170; Sociology 146

*Development and its Impact on Social Cleavages:* Anthropology 122B, 126A, 126B; Political Science 124, 178; Sociology 145B

Four courses to fulfill Area Studies Requirement .....

Education/Internship Abroad for a minimum of one quarter

**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, but will accept a minimum of three from one region and one from a different region if course offerings within the region of choice are insufficient. 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**

*History:* History 113, 115A, 115B, 115C, 115D

*Social Analysis:* African American and African Studies 107C, 110, 111, 156, Anthropology 140A, 140B, 142, Native American Studies 120, 133, Political Science 134, 149, Women's Studies 184

*Culture and Literature:* African American and African Studies 157, 162, Art History 150, Comparative Literature 147, 166, Dramatic Art 155A, French 124

**East and South Asia**

*History:* History 191E, 191F, 194C, 194D, 194E, 195B, 196B

*Social Analysis:* African American and African Studies 107C, Anthropology 143A, 143B, 147, 148A, 148B, 148C, 149B, Economics 171, Geography 126, Political Science 148A, 148B, 148C, Sociology 147, 188

*Culture and Literature:* Art History 153, 163C, Chinese 104, 105, 110, Dramatic Art 154, East Asian Studies 113, Japanese 103, 104, 106, 107, 131, 132, 133, 135, 136

**Latin America**

*History:* 162, 163B, 164, 165, 166B, 167, 168

*Social Analysis:* African American and African Studies 107A, Anthropology 144, 146, Chicana/o Studies 130, Native American Studies 120, 133, Political Science 143

*Culture and Literature:* African American and African Studies 163, Art History 151, Comparative Literature 152, 165, Dramatic Art 155A, Spanish 149, 151N, 153, 154, 155, 156, 157, 158, 170, 172

**Russian and East/Central Europe**

*History:* History 138B, 138C, 143

*Social Analysis:* Political Science 144

*Culture and Literature:* Russian 123, 129, 130, 131, 132, 143, 151

**Western Europe**

*History:* History 140, 141, 142A, 144B, 145, 146A, 146B, 147B, 147C, 151D

*Social Analysis:* African American and African Studies 107C, Geography 123, Political Science 137, 147, 161

*Culture and Literature:* French 107N, 108, 120, 121, 133, German 115, 118B, 118C, 118D, 118E, 120, 126, 141, 142C, 143, 168, 185, Italian 108, 120A, 120B, Spanish 137N, 138N, 139, 140N, 141, 142, 148, 157, 170

**Total units for the major ..... 55-97**

# Italian

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## **New and changed courses in Italian (ITA)**

### **Lower Division Courses**

#### **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.—I, II, III. (I, II, III.) Cannon

(change in existing course—eff. fall 05)

# Japanese

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## New and changed courses in Japanese (JPN)

### Lower Division Courses

#### 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.—Iwasaki

(new course—eff. summer session II 04)

#### 1AS. Intensive Elementary Japanese (15)

Lecture/discussion—15 hours. Intensive course taught combining 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. Offered in Japan. Not open for credit to students who have taken course 1, 2, or 3.—VI. (VI.) Iwasaki

(new course—eff. spring 06)

#### 7S. Intensive Intermediate Japanese (20)

Lecture/discussion—20 hours. Prerequisite: course 2. Special intensive course that combines the work of courses 3, 4, 5, and 6. Introduction to Japanese grammar and development of all language skills in a cultural context with emphasis on communication. Taught in Japan. Not open for students who have taken course 3, 4, 5, or 6.—III.

(new course—eff. spring 05)

#### 15S. Introduction to Japanese Culture (2)

Lecture/discussion—1.5 hours; term paper. Aspects of Japanese culture: literature, history, religion, art, language, and society. Conducted in English; taught in Japan.—III.

(new course—eff. spring 05)

### Upper Division Courses

#### 117S. Intensive Modern Japanese: Reading and Discussion (17)

Lecture/discussion—17 hours. Prerequisite: course 5. Intensive course taught combining the work of courses 1, 2 and 3. Intensive course combining the work of courses 6, 111, 112, and 113. Completes introduction to basic Japanese grammar. Develops more advanced reading, writing, and conversation skills in a cultural context. Taught in Japan. Not open to students who have taken courses 6, 111, 112, or 113.—III. (III.)

(new course—eff. spring 06)

# Landscape Architecture

## Changes in B.S. Major Requirements for Landscape Architecture Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>8</b>     |
| English 3, University Writing Program 1, 18, 19, 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, or 104E.....   | 4            |
| Communication 1 .....  | 4            |
| <b>Preparatory Subject Matter</b> .....  | <b>62-71</b> |
| <b>Biological Sciences 1A, 1C, or 10</b> .....   | <b>4-5</b>   |
| Environmental Horticulture 6.....  | 4            |
| One course from Mathematics 16A; Statistics 13; Computer Science 10 .....  | 3-4          |
| One course from Chemistry 2A, 10; Physics 1A, 10; Geology 1; Geography 1; or Soil Science 10 .....   | 3-5          |
| One course from Landscape Architecture 2, Geography 2, or 10 .....   | 3-4          |
| Two courses from Anthropology 2, 3, 20, Economics 1A, 1B, Psychology 1, Political Science 1, 2, 3, 4, 5, 7, Sociology 1, 2, 3, 4, 5, or 25.....  | 8-10         |
| Two courses from Art Studio 2, 5, 16, 142, Design 125, any course from History, Music, Dramatic Art, Philosophy, Art History, language or literature .....   | 8-10         |
| Landscape Architecture 1, 21, 23, 30, 50, 60, 70 .....   | 28           |
| <b>Breadth/General Education</b> .....   | <b>0-24</b>  |
| See General Education requirement  |              |
| <b>Depth Subject Matter</b> .....  | <b>44-47</b> |
| Landscape Architecture 160, 161, 170, 193A, 193B .....   | 20           |
| Four studios from Landscape Architecture 180/181 or 191 .....  | 17-20        |
| Landscape Architecture 120 or equivalent.....  | 4            |
| Landscape Architecture 190 (three quarters).....   | 3            |
| Internship (Landscape Architecture 192) recommended.   |              |
| <b>Restricted Electives</b> .....  | <b>32</b>    |
| Psychology 155 .....   | 4            |
| Psychology 155 .....   | 4            |
| Two courses from Environmental Horticulture 105, 133; Plant Biology 147; Plant Biology 102; Wildlife Fish, and Conservation Biology 156. (One course must be Environmental Horticulture 105 or Plant Biology 102.) ..... | 8            |
| Select 20 units of upper division courses in consultation with adviser .....   | 20           |
| <b>Unrestricted Electives</b> .....  | <b>0-32</b>  |
| <b>Total Units for the Major</b> .....   | <b>180</b>   |

## New and changed courses in Landscape Architecture (LDA)

### Upper Division Courses

#### 181F. Landscape Ecology and Design Planning Studio (3)

Studio—6 hours. Prerequisite: courses 21, 23, 50, 60, and 170, 180F concurrently. Design theory and methods to real-world projects in ecology. Ecological principles and their application in biological conservation, ecological restoration, and landscape planning, design, and management. Field trip required. Offered in alternate years.—II. Greco

(change in existing course—eff. fall 04)

#### 180G. Special Topics in Landscape Architecture: Landscape and Regional Land Planning (2)

Lecture—2 hours. Prerequisite: upper division standing. Theories, laws, and practices of community planning. Creation of livable and sustainable communities and natural landscapes, Smart growth, new urbanism, neo-traditional town planning, transit-oriented, and sustainable communities. Traditional master planning vs. participatory planning and design approaches. Offered in alternate years.—I. McNiel, Loux

(change in existing course—eff. winter 05)

### Graduate Courses

#### 299. Directed Individual Research for Graduate Students (1-12)

Requires consent of instructor. May be repeated for credit. (S/U grading only.)

(change in existing course—eff. spring 05)

# Latin American and Hemispheric Studies

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## New Minor for Latin American and Hemispheric Studies (LAH)

(College of Letters and Science)

The minor in Latin American and Hemispheric Studies offers students the opportunity to explore connections throughout the Western Hemisphere from an array of perspectives across multiple academic fields.

The minor is made up of six courses, arranged in three tiers: Basic (one lower division course on the history of Latin America); Core (two introductory upper division courses chosen from a designated list of fields other than History); and Elective (three additional upper division courses from a designated list of courses that focus primarily on Latin American and/or Hemispheric issues). Students are strongly encouraged to develop proficiency in Spanish, either through course work (such as completion of Spanish 24 or 33), or through life experience.

### Minor Program Requirements

UNITS

**Latin American and Hemispheric Studies ..... 24**

Basic Courses .....4

One course from History 7A, 7B, 7C

Core Courses .....8

One course each from two of the following categories:

- a) Anthropology 144;
- b) Native American Studies 115;
- c) Spanish 150 or 151;
- d) Political Science 143

Elective Courses .....12

Three courses selected from the following list to achieve a total of 24 units: African and African American Studies 107A, 155, 163; Anthropology 130C, 146; Art History 151; Chicana/o Studies 130; Comparative Literature 151, 152, 165; Native American Studies 120, 125, 133, 181A, 181B, 181C, 184; History 160, 162, 163A, 163B, 164, 165, 166A, 166B, 167, 168, 169A, 169B; Spanish 117, 149, 153, 154, 155, 156, 157, 158, 159, 170, 171, 172, 174, 176

**Minor adviser.** T. Holloway, 5213 Social Sciences and Humanities Building, (530) 754-9453

# Law, School of

## New and changed courses in Law (LAW)

### Graduate Courses

#### 205. Constitutional Law I (4)

Discussion—4 hours. The principles, doctrines and controversies regarding the basic structure of and division of powers in American government. Specific topics include judicial review, jurisdiction, standing to sue, federalism, federal and state powers and immunities, and the separation of powers among the branches of the federal government.

(change in existing course—eff. fall 04)

#### 210A. Privatization of Criminal Justice Seminar (2)

Seminar—2 hours. Prerequisite: Prior social theory or criminal procedure knowledge not required; completion of course 227A strongly recommended. Analyze the legal, historical, and sociological aspects of the growing private sector provision of criminal justice services traditionally assumed by government, including prisons, policing, and adjudication. Limited enrollment.

(new course—eff. fall 05)

#### 211. Negotiation (2)

Discussion—2 hours. Theoretical and empirical approaches to negotiation for the purposes of making deals and resolving legal disputes. Limited enrollment.

(change in existing course—eff. fall 05)

#### 214. Estate and Gift Tax (2)

Discussion—2 hours. Prerequisite: course 220; course 221 recommended. Fundamentals of federal transfer taxation, including the estate tax, the gift tax, and the generation-skipping transfer tax.

(change in existing course—eff. fall 05)

#### 215. Business Associations (4)

Discussion—4 hours. Legal rules and concepts applicable to business associations, both public and closely held. Corporate form of organization, partnerships and other associational forms.

(change in existing course—eff. fall 05)

#### 215S. Special Session Business Associations (4)

Discussion—4 hours. This course provides a broad survey of the legal rules and concepts applicable to business associations, both public and closely held. Principal attention is given the corporate form of organization, although partnerships are also treated briefly. Topics surveyed include the planning of business transactions, the process of incorporation, the financing of corporations, and role of managements and shareholders, the federal securities laws, and social responsibility.

(change in existing course—eff. special summer session 05)

#### 218. Constitutional Law II (4)

Discussion—4 hours. The First Amendment and the Equal Protection Clause. Examination of freedom of speech and assembly, focusing on the various kinds of speech the courts have identified and their constitutional significance: political speech, commercial speech, offensive speech, obscenity, fighting words, and speech constituting a clear and present danger. Issues involving the forum in which speech occurs, prior restraint, overbreadth, and vagueness doctrine, and the protection provided symbolic expression. Suspect class doctrine, including discrimination on the basis of race, gender, alienage and other characteristics, affirmative action, and the problem of “invidious motive,” as well as state action and the extent to which the equal protection clause prevents government from burdening the exercise of fundamental rights.

(change in existing course—eff. fall 05)

#### 220S. Special Session Federal Income Taxation (2)

Discussion—2 hours. Introduction to the basic principles of federal income taxation using the American federal tax model. Topics include identification of income subject to taxation, gains and losses from property transactions, the timing of income and deductions and the identity of people subject to tax on particular items of income.

(change in existing course—eff. special summer session 05)

#### 229. Scientific Evidence (3)

Discussion—3 hours. Prerequisite: course 219. In addition to examining the evidence law governing the admission of scientific testimony, this course considers trial advocacy in presenting and attacking such testimony. Each student is required to both make an oral class presentation and prepare a research paper dealing with a particular forensic technique. Limited enrollment.

(change in existing course—eff. spring 05)

#### 232. Real Estate Finance (2)

Discussion—2 hours. An examination of the problems involved in the acquisition, financing, and development of real estate, and of lender remedies and debtor protections in the event of debtor default. The practical application of California legal doctrines.

(change in existing course—eff. spring 05)

#### 235. Administrative Law & Policy Seminar (3)

Seminar—3 hours. Provides in-depth coverage of one or more topical issues in administrative law and policy, such as the relationship between public participation and expert oversight in guiding administrative agency decision making. Enrollment limited.

(change in existing course—eff. fall 05)

#### 235A. Seminar in Administrative Law (2)

Seminar—2 hours. Prerequisite(s): One environmental or administrative law course; administrative law strongly recommended. Provides in-depth coverage of one or more topical issues in administrative law and policy, such as the relationship between public participation and expert oversight in guiding administrative agency decision making. Limited enrollment.

(new course—eff. fall 05)

#### 237. Legal History (2)

Discussion—2 hours. A survey of Anglo-American legal history from the origins of the common law in medieval England through the twentieth-century. The course will focus on the development of legal institutions, such as courts and juries, as well as on doctrines of substantive law.

(change in existing course—eff. fall 05)

#### 238A. Tax Strategies of Business (2)

(cancelled course—eff. fall 04)

#### 240. Elections and Political Campaigns (2)

Discussion—2 hours. Covers selected constitutional and statutory aspects of federal and state elections, including campaign finance, initiatives, and other topical issues. Limited enrollment.

(change in existing course—eff. fall 05)

#### 240A. Law of the Political Process (3)

Discussion—3 hours. Covers many of the foundational issues in the “law of democracy,” as that body of statutory and constitutional law has developed in the United States.

(new course—eff. fall 05)

**242S. Special Session Conflict of Laws (2)**

Discussion—2 hours. Study of transactions with multi-state and international contracts. Topics include jurisdiction, recognition of foreign judgments, and choice of applicable law. Addresses problems that international lawyers encounter in a wide variety of deals with the emphasis on international commercial deals.

(change in existing course—eff. special summer session 05)

**245T. Death Penalty Seminar (2)**

Seminar—2 hours. Offers overview of the constitutional law governing the death penalty in the United States. Limited enrollment.

(new course—eff. spring 05)

**247. Taxation of Partnerships and LLCs (2)**

Discussion—2 hours. Prerequisite: course 220. The federal income taxation of business entities whose owners are taxed on the income, deductions and losses of the entity on a pass-through basis.

(change in existing course—eff. spring 06)

**247B. Corporate Tax (4)**

Discussion/laboratory—4 hours; discussion. Federal income tax relationship between corporations and federal income tax relationship between corporations' owners. Transfer of funds into a corporation on formation and the re-transfer of money and property from the corporation to shareholders. Taxable and non-taxable corporate restructuring in the form of sales, mergers, acquisitions, and divisions of corporations. Subchapter S corporations.

(change in existing course—eff. fall 05)

**248. Public International Law (4)**

Discussion—4 hours. Basic international law concepts and the law-making process. Topics include treaty law and customary international law; relationships between international law and national law; dispute settlement and international litigation; states, international organizations and other "persons" in international law; jurisdiction; and international regulation of transnational problems.

(change in existing course—eff. fall 05)

**248A. Jurisdiction in Cyberspace Seminar (2)**

Seminar—2 hours. 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. Limited enrollment. GE Credit: Wri.

(new course—eff. fall 05)

**248E. Law of the United Nations (2)**

(cancelled course—eff. fall 04)

**248G. Spanish for Lawyers (2)**

(cancelled course—eff. spring 04)

**249S. Special Session Comparative Law (1)**

Discussion—1 hour. This course will provide a comparative perspective for students of American law. After an initial look at the uses of the comparative method, discussions will be centered around the main differences between common law and civil law and the different styles of legal thinking. Topics to be covered will be the evolution of the civil law and the idea of codification, the structure of European civil codes and the interpretation of their provisions, the personnel of the law and procedure in civil law countries, and the analysis of selected problems of substantive law. Knowledge of a foreign language will not be required.

(change in existing course—eff. special summer session 05)

**250. Jurisprudence Seminar (2)**

Seminar—2 hours. This is a seminar about theories of constitutional adjudication. Limited enrollment.

(change in existing course—eff. fall 05)

**255. Pension and Employee Benefit Law (3)**

Discussion—3 hours. Prerequisite: course 220. The federal regulation and taxation of private pensions and employee benefits. The Employee Retirement Income Security Act (ERISA), including such topics as coverage, forfeitures, spousal rights, creditor access, fiduciary duties, preemption of state law, remedies, and other litigation issues. Internal Revenue Code issues such as discrimination in favor of the highly compensated, limitations on contributions and benefits, rollovers, IRAs, early distribution penalties, and minimum distribution rules.

(change in existing course—eff. fall 05)

**257B. Statutory Interpretation (2)**

Seminar—2 hours. This course addresses the process of statutory interpretation, commercial and public interest, and construction of public instruments. The course covers legal and political science theories, and the practicalities of the legislative process, which bear on interpretation of statutes and regulations.

(new course—eff. spring 06)

**259. Feminist Legal Theory (3)**

Discussion—3 hours. Women's legal history and feminist theory, including liberal, radical, cultural, anti-essentialist, and post-modern feminism. Consider relationship between theory and practice by looking at a number of issues that arise when the law intersects with women's lives, e.g., pornography, prostitution, rape, sexual harassment, divorce.

(change in existing course—eff. fall 05)

**260. Employment Discrimination (2)**

Discussion—2 hours. Examination of federal law prohibiting employment discrimination based upon race, color, religion, sex, national origin, age, and sexual orientation. Focus is on Title VII of the Civil Rights Act of 1964 and includes brief discussion of '1981, '1983, the Equal Pay and Age Discrimination Acts. California fair employment laws are also covered.

(change in existing course—eff. fall 05)

**262S. Special Session Antitrust (1)**

Discussion—1 hour. A study of the federal antitrust laws including price fixing, limits on distribution, tying arrangements, monopolization and mergers.

(change in existing course—eff. special summer session 05)

**263B. Advanced Trial Practice (2)**

(cancelled course—eff. fall 04)

**264A. Ocean and Coastal Law (2)**

Discussion—2 hours. An introduction to the coastal and ocean environment.

(new course—eff. spring 05)

**266. Commercial Law (2)**

(cancelled course—eff. fall 04)

**269A. Basic Finance (3)**

Discussion—3 hours. Students with a non-law basic finance course must have instructor's permission. Basic techniques of analysis that are part of the core curriculum in a good business school are studied. Purpose is to give you background necessary for understanding and advising clients and for understanding other business-related law courses.

(change in existing course—eff. fall 05)

**270S. Special Session International Business Transactions (2)**

Discussion—2 hours. A consideration of select legal problems arising from international business transactions. Topics include the international sales contract, letters of credit, transfers of technology, regulation of bribery, repatriation of profits, and national efforts to control imports.

(change in existing course—eff. special summer session 05)



**274AS. Summer Session Intellectual Property (2)**

Discussion—2 hours This course provides a broad survey of the field of intellectual property. Areas covered will include trademarks, patents, trade secrets, idea protection, unfair competition, and copyright.

(change in existing course—eff. special summer session 05)

**276. Juvenile Justice Seminar (2)**

Seminar—2 hours. Legal and philosophical bases of a separate juvenile justice process for crimes committed by minors; police investigation, apprehension, and diversion; probation intake and detention; juvenile court hearing and disposition; juvenile corrections. The role of counsel at each phase of the process is examined.

(new course—eff. fall 05)

**278. Pretrial Skills (2)**

Discussion—2 hours. This course uses role-playing exercises, videotaped simulations, and related projects to introduce students to lawyering skills basic to the practice of law, including client interviewing, witness interviewing and discovery, including depositions. Limited enrollment.

(change in existing course—eff. fall 05)

**284. Law and Economics (3)**

Discussion—3 hours. Introduces students to the economic analysis of law. We will explore several economic methods and concepts, including rational choice theory, behavioral economics, and utilitarianism. We will apply these tools to illuminate and critique familiar areas of law, including property, contracts, torts, criminal law, and civil procedure. Prior study of economics is not required.

(change in existing course—eff. fall 05)

**285C. Agricultural Law and Policy (3)**

Discussion—3 hours. An introduction to agricultural law, focusing on legal principles and issues at the forefront of contemporary debates about agriculture in society.

(new course—eff. fall 05)

**286. Bioethics Seminar (2)**

Seminar—2 hours. Course examines the ethical and legal issues that arise from biomedical research and use of medical technologies. Limited enrollment. GE Credit: Wri.

(new course—eff. fall 05)

**286A. Topical Issues in Health Law (2)**

Seminar—2 hours. Course identifies and analyzes a variety of legal issues arising in the dynamic field of health care. The specific topics for consideration are drawn from four general themes relating to health care: quality, cost, access, and the personhood of the patient. Limited enrollment.

(change in existing course—eff. fall 05)

**286D. Legal Psychology Seminar (2)**

Seminar—2 hours. Examines how psychological theory and research can be used to shape laws and policies to make them better reflect what we know empirically about how individuals process information, make decisions and behave.

(new course—eff. fall 05)

**290A. Nuclear Technology and the Law (2)**

(cancelled course—eff. fall 01)

**291B. International Investment Dispute Seminar (2)**

Seminar—2 hours. This seminar will examine the law of investor-State dispute resolution.

(new course—eff. fall 05)

**292. Immigration Law and Procedure (3)**

Discussion—3 hours. History of U.S. immigration and policy; federal agency interrelationship; entry of nonimmigrants and immigrants into the United States; worldwide quota and preference systems; family and employment preferences; removal procedures; discretionary relief available to persons otherwise subject to removal; defenses to removal; immigration consequences of criminal conviction; refugee and asylum law; citizenship and naturalization; and questions of administrative and judicial review.

(change in existing course—eff. fall 05)

**294A. Law and Popular Culture (2)**

Seminar—2 hours. This course examines works of popular culture, films, and legal texts. Each session will focus on a particular film and its cultural implications, particular problem or problems of law, law practice, legal ethics, traditional ethics, or public policy.—I. (I.)

(new course—eff. spring 06)

**295A. Trademark and Unfair Competition Law (2)**

Discussion—2 hours. Prerequisite: course 274 recommended. We will take an intensive look at selected issues in Trademark Law, including the concepts of trademarks and unfair competition, acquisition and loss of trademark rights, infringement, authors and performers rights, trademarks as speech, and international aspects of trademark protection.

(new course—eff. fall 05)

**297. Alternative Dispute Resolution (3)**

Discussion—3 hours. Introduces students to a wide variety of alternative dispute resolution processes, with an emphasis on negotiation, mediation and arbitration. Successful completion of the course prepares students for the widespread availability and growing popularity of ADR in almost every area of modern legal practice.

(change in existing course—eff. fall 05)

**298. Sociology of the Legal Profession (2)**

Seminar—2 hours. Comprehensive look at the organization, operation, and ideology of the legal profession. Limited enrollment.

(change in existing course—eff. fall 05)

**Professional Courses****408A. Education Law (2)**

Seminar—2 hours. An introduction to the field of “school law,” focusing on public education from kindergarten through high school. Topics range from constitutional law, first amendment and due process issues for both faculty and students, to federal and state law on special education. Equitable funding of public schools and labor relations under public sector state statutes.

(change in existing course—eff. spring 05)

**410A. Moot Court (2)**

Discussion/laboratory—2 hours. Basic appellate practice and procedure. Beginning instruction in oral advocacy skills and an opportunity to practice these skills in front of a moot court. Students compete in two rounds of oral arguments which, combined with the second semester of the program, determine the rankings for selecting participants in the annual Neumiller Competition and other interschool competition teams and for membership on the Moot Court Board. Both courses 410A and 410B must be taken in order to qualify for most interschool competitions. Limited enrollment. (S/U grading only)

(change in existing course—eff. fall 05)

**411. Journal of International Law and Policy (1-2)**

The Journal is a biannual journal produced by King Hall students with an interest in international law. The editor-in-chief of the journal receives two units of credit each semester. The managing editor receives one unit of credit each semester. (S/U grading only.)

(change in existing course—eff. fall 05)

**411A. International Law Journal (1-2)**

The Editor in Chief of the Journal of International Law and Immigration receives two credits for each semester of service. Only one person may receive this credit in any one semester as editor in chief. Managing and executive editors receive one unit. (S/U grading only.)

(change in existing course—eff. fall 04)

**411B. Journal of Juvenile Law and Policy (1-2)**

A biannual publication of the UC Davis School of Law that addresses the unique concerns of children in the American legal system. The editor-in-chief of the journal receives two credits each semester. Managing editors receive two credit each semester. (S/U grading only.)

(change in existing course—eff. fall 05)

**418. Environs Journal (1-2)**

Units will be distributed as follows: The editor in chief will receive two units of credit per semester, for a total of four units over the course of the academic year. The co-editor in chief will continue to split credit, with each taking credit for one semester, or alternative with each receiving one unit per semester, for a total of two units each over the course of the academic year. The managing editors will be awarded one unit of credit per semester for a total of two units of the course of the academic year. (S/U grading only.)

(change in existing course—eff. spring 05)

**419. Advanced Writing Project (1-4)**

The completion of a writing requirement project under the active and regular supervision of a faculty member in satisfaction of the legal writing requirement. The writing project must be an individually authored work of rigorous intellectual effort of at least 20 typewritten double-spaced pages, excluding footnotes. The project may take any of several forms, for example, a paper, a brief, a memorandum of law, a proposed statute, a statutory scheme or set of administrative regulations (with explanatory comments), or a will or agreement (with explanatory comments). The advanced writing project may also be undertaken in connection with another course or seminar to satisfy the legal writing requirements. The number of units shall be approved by the faculty supervisor and will depend upon the scope of the writing effort. (S/U grading only.)

(change in existing course—eff. fall 05)

**419A. Advanced Writing Project (1-4)**

The completion of a writing requirement project under the active and regular supervision of a faculty member in satisfaction of the legal writing requirement. The writing project must be an individually authored work of rigorous intellectual effort of at least 20 typewritten double-spaced pages, excluding footnotes. The project may take any of several forms, for example, a paper, a brief, a memorandum of law, a proposed statute, a statutory scheme or set of administrative regulations (with explanatory comments), or a will or agreement (with explanatory comments). The advanced writing project may also be undertaken in connection with another course or seminar to satisfy the legal writing requirements. The number of units shall be approved by the faculty supervisor and will depend upon the scope of the writing effort. (S/U grading only.)

(new course—eff. fall 05)

**419S. Special Session Advanced Writing Project (1-4)**

The completion of a writing requirement project under the active and regular supervision of a faculty member in satisfaction of the legal writing requirement. The writing project must be an individually authored work of rigorous intellectual effort of at least 20 typewritten double-spaced pages, excluding footnotes. The project may take any of several forms, for example, a paper, a brief, a memorandum of law, a proposed statute, a statutory scheme or set of administrative regulations (with explanatory comments), or a will or agreement (with explanatory comments). The advanced writing project may also be undertaken in connection with another course or seminar to satisfy the legal writing requirements. The number of units shall be approved by the faculty supervisor and will depend upon the scope of the writing effort. (S/U grading only.)

(change in existing course—eff. special summer session 05)

**470. Administration of Criminal Justice Externship (2-6 or 12)**

Clinical activity—2-12 hours. Prerequisite: Completion of, or concurrent enrollment, in courses 219 and 227; course 263A recommended. 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. Limited enrollment. (S/U grading only.)

(change in existing course—eff. fall 05)

**499. Independent Research Project (1-4)**

Students may receive credit for individual projects, subject to the following regulations: (1) the project may extend over no more than two semesters; (2) each project will be under the supervision of a faculty member; (3) an outline of the project must be approved by the supervising faculty member; (4) normally, no faculty member will be permitted to supervise more than five students working on individual programs during any semester; and (5) each student must submit an individual paper or approved alternative to the supervising faculty member. (S/U grading only.)

(change in existing course—eff. fall 05)

**499A. Independent Research Project (1-4)**

Students may receive credit for individual projects, subject to the following regulations: (1) the project may extend over no more than two semesters; (2) each project will be under the supervision of a faculty member; (3) an outline of the project must be approved by the supervising faculty member; (4) normally, no faculty member will be permitted to supervise more than five students working on individual programs during any semester; and (5) each student must submit an individual paper or approved alternative to the supervising faculty member. Grading is on a Satisfactory/Unsatisfactory basis unless a request for letter grading has been made in advance.

(new course—eff. fall 05)

**499S. Special Independent Research Project (1-4)**

Students may receive credit for individual projects, subject to the following regulations: (1) the project may extend over no more than two semesters; (2) each project will be under the supervision of a faculty member; (3) an outline of the project must be approved by the supervising faculty member; (4) normally, no faculty member will be permitted to supervise more than five students working on individual programs during any semester; and (5) each student must submit an individual paper or approved alternative to the supervising faculty member.

(change in existing course—eff. special summer session 05)

**499SA. Special Session Independent Research Project (1-4)**

Students may receive credit for individual projects, subject to the following regulations: (1) the project may extend over no more than two semesters; (2) each project will be under the supervision of a faculty member; (3) an outline of the project must be approved by the supervising faculty member; (4) normally, no faculty member will be permitted to supervise more than five students working on individual programs during any semester; and (5) each student must submit an individual paper or approved alternative to the supervising faculty member. (Deferred grading only, pending completion of sequence.)

(change in existing course—eff. special summer session 05)

**499SB. Special Session Independent Research Project (1-4)**

Students may receive credit for individual projects, subject to the following regulations: (1) the project may extend over no more than two semesters; (2) each project will be under the supervision of a faculty member; (3) an outline of the project must be approved by the supervising faculty member; (4) normally, no faculty member will be permitted to supervise more than five students working on individual programs during any semester; and (5) each student must submit an individual paper or approved alternative to the supervising faculty member.

(change in existing course—eff. special summer session 05)

## Letters and Science, College of

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### **New Majors and changes to Majors in the College of Letters and Science**

The Evolution and Ecology Studies major has changed to Evolution, Ecology and Biodiversity.

The Medieval Studies major has changed to Medieval and Early Modern Studies.

The TechnoCultural Studies major has been added.

### **New Minors in the College of Letters and Science**

The Latin American and Hemispheric Studies minor program has been added.

The Middle East/South Asia Studies minor program has been added.

The Quantitative Biology and Bioinformatics minor program has been added.

The Sexuality Studies minor program has been added.

### **Changes to English Composition Requirement**

The English Composition requirement can be met in one of two ways:

1. by passing the English Composition Examination upon completion of 70 units of degree credit (the examination does not yield credit);

#### **OR**

2. by completing with a grade of C– (or P) or better

(a) One course from English 3, Comparative Literature 1, 2, 3, 4, Native American Studies 5, or University Writing Program 1, 18, 19; and

(b) One course from University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, or 104F (which must be taken after 84 units have been completed).

**Transfer Courses in English Composition.** Transfer courses considered by the Dean to be equivalent or comparable to English 3, Comparative Literature 1, 2, 3, 4, Native American Studies 5, or University Writing Program 1, 18, 19, 101, 104A, 104B, 104C, 104D, 104E, 104F, will be accepted toward satisfaction of the English Composition requirement. Note that University Writing Program 101 and 104A, 104B, 104C, 104D, 104E, and 104F or the equivalent must be taken after you have completed 84 units of transferable degree credit.

If your transfer work does not include an acceptable English composition course taken after you had completed or accumulated 84 units, you may fulfill the requirement by examination (see below) or take University Writing Program 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104B, 104C, 104D, 104E, or 104F at UC Davis.

# Linguistics

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## New and changed courses in Linguistics (LIN)

### Lower Division Courses

#### 106. English Grammar (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 1 or English 3 or University Writing Program 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.) Not open for credit to students who have completed course 104. GE credit: ArtHum.—I. Ward

(change in existing course—eff. fall 05)

#### 182. Multilingualism (4)

Lecture/discussion—4 hours. 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. Limited enrollment. GE credit: ArtHum, SocSci, Div, Wrt.—III. (III.) Ramanathan, Timm

(new course—eff. spring 06)

### Graduate Courses

#### 264. Current Issues in Language and Gender (4)

Seminar—3 hours; term paper; project. Prerequisite: graduate standing; prior coursework in Linguistics, Gender Studies, or Cultural Studies is desirable; no expectation of bilingual proficiency. Exploration of the construction and performance of gender through language in cross-cultural perspective and in a variety of contexts: informal conversations, narratives, workplaces, schools, households, the mass media. Special topics may include: language acquisition; multilingualism; ecofeminism; queer theory. May be repeated for credit one time when topic differs. Offered in alternate years—(I.) Menard-Warwick, Timm

(new course—eff. fall 05)

# Management, Graduate School of

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## **New and changed courses in Management (MGT/MGP)**

### **Graduate Courses**

#### **224. Managing People in Modern Organizations (3)**

Lecture/discussion—3 hours. Modern systems for managing people. Examination of the changing workforce and workplace, emphasizing high-technology and knowledge-intensive organizations. The impact of firms' environment (competition, product market, regulations) on choices for managing people. The consequences of these choices for firms and managers.—II. (II.) Bechky

(change in existing course—eff. winter 05)

# Managerial Economics

## Changes in B.S. Major Requirements for Managerial Economics Major

|   | UNITS        |
|---|--------------|
| <b>English Composition Requirement</b> .....  | <b>4-12</b>  |
| At least 8 units from the following list:   |              |
| English 3, University Writing Program 1, 18, 19, 101, 102A, 102B, 102C, 102D, 102E, 102F, 102G, 104A, 104F  |              |
| Remaining 4 units from above list or from Comparative Literature 1, 2, 3, 4, Native American Studies 5, Communication 1   |              |
| <b>Preparatory Subject Matter</b> .....   | <b>72-75</b> |
| Management 11A-11B .....  | 8            |
| Agricultural Management and Rangeland Resources 21, Computer Science Engineering 10, 15 or 30.....  | 3-4          |
| Economics 1A-1B .....   | 8            |
| Mathematics 16A-16B-16C or 21A-21B.....   | 8-9          |
| Statistics 13, 103 .....  | 8            |
| Social Science, Natural Science, Agricultural Science....   | 37-38        |
| (See major breadth requirement checklist in department advising office or at <a href="http://www.agecon.ucdavis.edu">http://www.agecon.ucdavis.edu</a> for a complete list of courses.)   |              |
| <b>Breadth/General Education</b> .....  | <b>6-24</b>  |
| <i>Note: Approved General Education courses may be used to simultaneously satisfy Social, Natural, and Agricultural Science courses as defined in the Preparatory Subject Matter for the major and the campus General Education requirement.</i>  |              |
| <b>Depth Subject Matter</b> .....   | <b>20</b>    |
| Students graduating with this major are required to attain at least a C average (2.000) in all upper division courses taken at the University in the depth subject matter.  |              |
| Agricultural and Resource Economics 100A, 100B, 106, 155.....   | 16           |
| Economics 101 .....   | 4            |
| <b>Restricted Electives</b> .....   | <b>32</b>    |
| Choose at least one of the options below:   |              |
| <b>Agricultural Economics option</b>  |              |
| Choose at least 15 units from Agricultural and Resource Economics 120, 130, 132, 138, 139, 140, 145, 150. Select the remaining 17 units from the aforementioned courses, Agricultural and Resource Economics 18, or upper division courses in Agricultural and Resource Economics and/or Economics  |              |
| <b>Environmental and Resource Economics option</b>  |              |
| Agricultural and Resource Economics 175, 176 .....  | 8            |
| Choose at least 18 units from Agricultural and Resource Economics 15, 120, 138, 145, 146, 150, 156, Economics 123, 125, 130, Environmental Science and Policy 168A, 168B, 178. Select the remaining 6 units from the aforementioned courses or upper division courses in Agricultural and Resource Economics and/or Economics, Environmental Science and Policy 160, 161, 163, 165, 166, 167, 171, 172, 173, Environmental Toxicology 138 |              |

## Managerial Economics option

Agricultural and Resource Economics 18..... 4  
 Choose at least 12 units from Agricultural and Resource Economics 112, 118, 136, 157, 171A, 171B. Select the remaining 16 units from the aforementioned courses or from Agricultural and Resource Economics 115A, 120, 130, 132, 138, 139, 140, 143, 144, 145, 146, 150, 156, 175, 176, 194HA-194HB, Economics 115A, 121A, 121B, 151A, 151B, 160A, 160B

**Unrestricted Electives** .....

**Total Units for the Degree**..... **180**

**Advising Center** for the major is in 1176 Social Sciences and Humanities Building, (530) 752-4932 or 752-8096).

**Major Adviser.** H. Carman (*Agricultural and Resource Economics*).

## Changes in Minor Requirements for Managerial Economics Minor

### Minor Program Requirements

Before declaring a minor in Managerial Economics, a student must complete the following courses with a combined grade point average (GPA) of at least 2.80. All of these courses must be taken for a letter grade. In determining admission to minor status, the Department of Agricultural and Resource Economics counts only the first repeat of any pre-minor course.

|                                      |           |
|--------------------------------------|-----------|
| Economics 1A and 1B.....             | 8 units   |
| Mathematics 16A-16B or 21A-21B ..... | 6-8 units |
| Statistics 13 .....                  | 4 units   |

The Department of Agricultural and Resource Economics offers four minor emphases open to students majoring in other disciplines who wish to complement their study programs with a minor in Managerial Economics. Each emphasis requires Agricultural and Resource Economics 100A, which has prerequisites of Economics 1A-1B and Mathematics 16A-16B. For some courses, Statistics 13 and 103 may be required. Variable-unit courses and lower division courses are not accepted for any emphasis.

UNITS

**Managerial Economics**..... **18**

### General emphasis

|  |    |
|--|----|
| Agricultural and Resource Economics 100A or the equivalent .....               | 4  |
| Additional upper division courses in Agricultural and Resource Economics ..... | 14 |

### Agricultural Economics emphasis

|   |    |
|---|----|
| Agricultural and Resource Economics 100A or the equivalent .....  | 4  |
| Additional upper division courses in Agricultural and Resource Economics .....  | 14 |
| Select 9 or more units from Agricultural and Resource Economics 120, 130, 132, 138, 139, 140, 145, 150.                   |    |
| Select additional upper division Agricultural and Resource Economics courses to complete the 18-unit total for the minor. |    |

**Environmental and Natural Resource Economics emphasis**

Agricultural and Resource Economics 100A or the equivalent .....4  
 Additional upper division courses in Agricultural and Resource Economics .....14  
 Select 9 or more units from Agricultural and Resource Economics 175 and 176, and either 100B or 120.  
 Select additional upper division Agricultural and Resource Economics courses to complete the 18-unit total for the minor.

**Managerial Economics emphasis**

Agricultural and Resource Economics 100A or the equivalent .....4  
 Additional upper division courses in Agricultural and Resource Economics .....14  
 Select 9 or more units from Agricultural and Resource Economics 112, 118, 136, 157, 171A, 171B.  
 Select additional upper division Agricultural and Resource Economics courses to complete the 18-unit total for the minor.

# Mathematics

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## New and changed courses in Mathematics (MAT)

### Graduate Courses

#### **201A-201B-201C. Analysis (4-4-4)**

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: graduate standing in Mathematics or Applied Mathematics, or consent of instructor. Metric and normed spaces. Continuous functions. Topological, Hilbert, and Banach spaces. Fourier series. Spectrum of bounded and compact linear operators. Linear differential operators and Green's functions. Distributions. Fourier transform. Measure theory. Lp and Sobolev spaces. Differential calculus and variational methods.—I-II-III. (I-II-III.)

(change in existing courses—A eff. fall 04, B eff. winter 05, C eff. spring 05)

#### **203A-203B-203C. Modern Applied Analysis (4-4-4)**

(cancelled courses—eff. spring 05)



# Medical Informatics

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## New and changed courses in Medical Informatics (MDI)

### Graduate Courses

#### **202. Computer-Based Patient Records (4)**

Lecture/discussion—3 hours; discussion—1 hour. Prerequisite: current enrollment within the Health Informatics graduate program or consent of instructor. Introduction and overview of computer-based clinical record systems. Topics include data modeling, health system standards and terminologies; security, privacy and confidentiality; workflow modeling; data visualization; legal; decision support; public health; and evidence-based practice.—III. (III.) Turner

(change in existing course—eff. fall 05)

#### **210. Introduction to Medical Informatics (4)**

Lecture—3 hours; discussion—1 hour. Overview course to give the student a broad exposure to the field of Health Informatics. Topics covered include, but are not limited to, networking, information systems, coding, HL7, Security, and HIPPA.—I. (I.) Galvez

(change in existing course—eff. fall 05)

#### **211. Telemedicine (4)**

Web virtual lecture—3 hours; web electronic discussion—1 hour. Issues for the development and maintenance of a successful telemedicine program with focus on strategic planning, clinical applications, project management, risk management and legal issues; reimbursement and contracting; human resources and program sustainability.—I, II, III. (I, II, III.) Yellowlees

(new course—eff. fall 05)

## Medicine, School of

### New and changed courses in Medical Sciences (MDS)

#### Professional Courses

##### 411A-411B-411C. Doctoring 1 (4-3.5-3)

Discussion—2-3 hours; clinical activity—1 hour; lecture/discussion—2-2.5 hours. Prerequisite: approval of committee on student progress. 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 basic science concepts to patient case scenarios, outpa-tient clinical experiences and didactic presentations. (Deferred grad-ing only, pending completion of sequence. P/F grading only.)—I, II, III. (I, II, III.) Jerent, Callahan

(new courses—eff. fall 04)

##### 421A. Doctoring 2 (2)

Discussion—2 hours; lecture/discussion—2 hours; internship—1 hour. Prerequisite: approval of School of Medicine Committee on Student Progress. Application of multidisciplinary basic, social and clinical science concepts to clinical cases in small group discussions. History and physical examination with M.D. preceptors. Didactics in epidemiology, ethics, sexuality, economics, and clinical reasoning. Evaluation of professional competencies, attitudes and skills needed in the practice of clinical medicine. (Deferred grading only, pending completion of sequence. P/F grading only.)—IV. (IV.) Stevensen

(new course—eff. summer 04)

##### 430A. Doctoring 3 (2)

Discussion—3 hours. Prerequisite: approval by the School of Medicine Committee on Student Progress. Application of multidisciplinary basic, social and 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. (Deferred grading only, pending completion of sequence. H/P/F grading only.)—IV. (IV.) Wilkes

(change in existing course—eff. summer 04)

##### 431A. Doctoring 3 (2)

(cancelled course—eff. summer 04)

##### 440A-440B-440C. Doctoring 4 Teaching Fellowship (9)

Discussion—1.5 hours; seminar—0.5 hours. Prerequisite: courses 430A, B, C, and D; consent of instructor; medical students only. Instruction on teaching methodology and pedagogy. Mentored teaching of junior medical students in seminar, lecture, and bedside. (Deferred grading only, pending completion of sequence. H/P/F grading only.)—440B-I, 440C-II, 440A-IV. (440B-I, 440C-II, 440A-IV.) Stevenson

(change in existing course—eff. summer 04)

##### 440D. Doctoring 4 Teaching Fellowship (3)

Discussion—1.5 hours; seminar—0.5 hours. Prerequisite: courses 430A, B, C, and D; consent of instructor; medical students only. Instruction on teaching methodology and pedagogy. Mentored teaching of junior medical students in seminar, lecture, and bedside. (Deferred grading only, pending completion of sequence. H/P/F grading only.)—III. (III.) Stevenson

(new course—eff. spring 05)

##### 460CR. Introduction to Clinical Research (3)

Lecture—3 hours; independent study. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. Introduction to the CRGG program and overview of major clinical research topics. Overview of basic clinical skills needed to accomplish CRGG mentored research project. (P/F grading only.)—Meyers, Pomeroy

(new course—eff. summer special session 04)

##### 461CR. Strategies for Grant Writing (2)

Discussion—2 hours; lecture—1 hour. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. Practical skills and strategies to create successful grant proposals in the NIH style and format. Generating ideas, identifying and accessing research resources, grant components, specific aims, background and significance, preliminary studies, budgets, and bios. Matriculation through UC system, and resubmissions. (P/F grading only.)—Rutledge

(new course—eff. summer special session 04)

##### 462CR. Introduction to Clinical Epidemiology and Study Design (3)

Lecture—25 hours; discussion—10 hours. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. Anatomy and physiology of conducting clinical epidemiologic research. Familiarity with three basic study designs (cross-sectional, case-control, and cohort). Principles of measurements in clinical epidemiological studies, basic methods for analyzing data, and ethical issues involved in conducting research. (P/F grading only.)—McCurdy, Romano

(new course—eff. summer special session 04)

##### 463CR. Methods in Clinical Research (4)

Lecture—3 hours; discussion—1.5 hours; laboratory/discussion—1.5 hours. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. Overview of major approaches to clinical research, including health services research techniques, informatics, using the GCRC, and preclinical methodologies available to enhance clinical projects. Overview of the clinical research support infrastructure available at UC Davis. Range of meth-odologies that can be applied to clinical research and multi-disciplin-ary perspective about clinical research. (P/F grading only.)—Lloyd, Kravitz, Berglund

(new course—eff. summer special session 04)

##### 464CR. Responsible Conduct of Research (3)

Lecture—3 hours. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. The nine NIH-man-dated modules: Data Acquisition and Reporting, Mentor Training, Publication Practices and Authorship, Peer Review/Grant Process, Collaborative Science, Human Subjects, Research with Animals, Conflict of Interest, Research Misconduct, and Entrepreneurship/ Industry Collaborations/Intellectual Property/Technology Transfer. (P/F grading only.)—Wun

(new course—eff. summer special session 04)

**465CR. Introduction to Medical Statistics (4)**

Lecture—36 hours; laboratory—12 hours. Prerequisite: completed 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, acceptance into Clinical Research Graduate Group K30 program. Biomedical applications of statistical methods. Statistics in clinical, laboratory and population medicine. Graphical and tabular presentation of data, probability, binomial, Poisson, normal, t-, F-, and Chi-square distributions, elementary nonparametric methods, simple linear regression and correlation, life tables. Microcomputer applications of statistical procedures in population medicine. (P/F grading only.)—Wegelin

(new course—eff. summer special session 04)

## Medicine: Epidemiology and Preventive Medicine

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### New and changed courses in Medicine: Epidemiology and Preventive Medicine (EPP)

#### Graduate Courses

##### 245. Statistical Analysis of Laboratory Data (4)

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: course 244 or equivalent; consent of Instructor. The analysis of data and design of experiments for laboratory data with an emphasis on gene expression arrays and other high-throughput biological assay technologies. For students in the K30 training program in the School of Medicine. Additional class capacity will be available for students in other programs, but it is essential that the K30 students be accommodated first.—I. (I.) Rocke

(new course—eff. fall 05)

##### 295. International Health (1)

Lecture/discussion—1 hour. Prerequisite: graduate standing. Forum for learning health issues and health care systems in other countries. Topics include health care for refugees, the impact of political strife on health, the health care professional in international settings. Evening seminars begin in Fall quarter and continue through Spring quarter. (Deferred grading only, pending completion of sequence. S/U grading only.)—I. (I.) Schenker

(new course—eff. fall 05)

#### Professional Courses

##### 402. Introductory Medical Spanish (2)

Lecture—2 hours. Prerequisite: medical student or consent of instructor. The vocabulary needed to conduct a basic history and physical examination in Spanish. (H/P/F grading only.)—III. (III.)

(change in existing course—eff. spring 06)

##### 471. Health Issues Confronting Asian Americans and Pacific Islanders (4)

Lecture/discussion—4 hours. Exploration of health issues confronting Asian Americans and Pacific Islanders. A framework for understanding health issues facing Asian Americans and Pacific Islanders. (H/P/F grading only.)—II. (II.) Chen

(new course—eff. winter 05)

##### 495. International Health (1)

Lecture/discussion—1 hour. Prerequisite: medical student in good standing. Forum for learning health issues and health care systems in other countries. Topics include health care for refugees, the impact of political strife on health, the health care professional in international settings. (Deferred grading only, pending completion of sequence. P/F grading only.)—I. (I.) Schenker

(change in existing course—eff. fall 04)

## Medicine: Family and Community Medicine

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### **New and changed courses in Medicine: Family and Community Medicine (FAP)**

#### **Upper Division Courses**

##### **192C. Primary Care Clinics (1-2)**

Clinical activity—6-8 hours; seminar—2 hours; lecture—1-2 hours. Prerequisite: consent of instructor, enrollment at the UC Davis campus, upper-division standing. Students must apply and interview with the Board of Clinica Tepati or Imani Clinic. Field experience introduces students to health care delivery, patient histories and physical examinations, health promotions and disease prevention, diagnosis and treatment of episodic, acute and chronic illness, basic laboratory testing and appropriate referral and follow-up. May be repeated for credit. (P/NP grading only.) —I, II, III, IV. (I, II, III, IV.) Smith, Solis

(change in existing course—eff. fall 04)

#### **Professional Courses**

##### **482. Medical Issues for Older Adults (1)**

(cancelled course—eff. winter 06)

##### **498. Directed Group Study (1-5)**

Variable—3-15 hours. Explore in-depth various topics in primary care. Extensive contact with and oversight by instructor. May be repeated for credit. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) Morgan, Hirsch

(new course—eff. fall 04)

## Medicine: Human Physiology

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### **New and changed courses in Medicine: Human Physiology (HPH)**

#### **Lower Division Courses**

#### **99. Special Study for Undergraduates (1-5)**

Prerequisite: consent of instructor. (P/NP grading only.)

(new course—eff. fall 04)

## Medicine: Infectious Diseases

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### New and changed courses in Infectious Diseases (IDI)

#### Professional Courses

##### **440. Introduction to AIDS and Related Disorders (1.5-6)**

Clinical Activity—30 hours; discussion—10 hours. Prerequisite: first and second year medical students must be in good academic standing and have consent from the instructor. Familiarizes students with the diagnosis and treatment of individuals infected with the human immunodeficiency virus. Students will interview patients, observe patient care and participate in ongoing clinic research as well as examine alternative lifestyles. May be repeated for credit. (H/P/F grading only)—I, II, IV.

(change in existing course—eff. spring 05)

## Medicine: Internal Medicine

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### **New and changed courses in Medicine: Internal Medicine (IMD)**

#### **Professional Courses**

#### **401A. Physical Diagnosis Practicum (1)**

(cancelled course—eff. fall 03)

#### **420F. Pathophysiology of the Endocrine System (2.5)**

Lecture/discussion—5.5 hours. Prerequisite: approval by the School of Medicine Committee on Student Progress. Open to medical students only. Students will develop an understanding of the fundamental aspects of hormone physiology, regulation and action. Students will understand the etiology, pathophysiology, diagnosis, and management of the major diseases of the endocrine system. (P/F grading only.)—I. (I.) Wexler

(change in existing course—eff. fall 04)



## Medicine: Internal Medicine—Nephrology

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### **New and changed courses in Medicine: Internal Medicine—Nephrology (NEP)**

#### **Professional Courses**

##### **401A. Physical Diagnosis Practicum (1)**

(cancelled course—eff. fall 03)

## Medicine: Internal Medicine—Rheumatology-Allergy

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### **New and changed courses in Medicine: Internal Medicine—Rheumatology-Allergy (RAL)**

#### **Upper Division Courses**

##### **209. Current Topics in Immunology (2)**

Discussion—2 hours. Prerequisite: basic immunology course and consent of instructor. Current developments in various aspects of immunology and their interrelationships. Focus on areas of immunology not currently covered in the basic and advanced immunology courses. May be repeated for credit if topic differs. (S/U grading only.)—II, III. (II, III.) Van de Water

(new course—eff. winter 05)

## Medicine: Master of Public Health

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### **New and changed courses in Medicine: Master of Public Health (MPH)**

#### **Graduate Courses**

##### **266. Applied Analytic Epidemiology (3)**

Lecture—2 hours; laboratory—2 hours. Prerequisite: Preventive Veterinary Medicine 404 or consent of instructor. Principles and applications in analysis of epidemiologic data. Methods of analyzing stratified and matched data, logistic regression for cohort and case-control studies, Poisson regression, survival-time methods. (Same course as Population Health and Reproduction 266.)—III. (III.) Kass

(new course—eff. spring 04)

## Medicine: Medical Microbiology

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### New and changed courses in Medicine: Medical Microbiology (MMI)

#### Lower Division Course

##### 10. Parasitic Disease in Humans (2)

Lecture—2 hours. Introduction to parasitic diseases in humans, including relationships between humans and parasites, symptoms, diagnosis, geographical distribution, treatment and prevention of parasitic disease. Not offered every year.— III. Theis

(change in existing course—eff. spring 06)

#### Upper Division Courses

##### 194H. Senior Honors Project in Medical Microbiology and Immunology (5)

Independent study—15 hours. Prerequisite: course 199 and consent of instructor. Project in research related to immunology of medically important viruses. Development of a hypothesis-driven project, performance of experimental protocols and preparation of graphical representation of original data. Requires oral and written presentation of research results. May be repeated three times for credit with consent of instructor. (P/NP grading only.)—I, II, III. (I, II, III.) Torres

(new course—eff. spring 04)

#### Graduate Courses

##### 208. Seminars in Microbiology and Immunology (1)

Seminar—1 hour. Research seminars on current topics in microbiology and immunology. May be repeated for credit if topic differs. (S/U grading only.)—I, II, III. (I, II, III.) Dandekar, Luckhart

(new course—eff. winter 05)

##### 209. Current Immunology (2)

(cancelled course—eff. winter 05)

##### 210. Physician Scientist Molecular Medicine Journal Club (1)

Lecture/discussion—1 hour. Research articles in current literature. Topics/articles to include a broad range of frontiers in biomedical literature. May be repeated for credit if topic differs. (S/U grading only.)—I. (I.) Bevins

(new course—eff. fall 04)

#### Professional Courses

##### 409. Current Immunology (2)

(cancelled course—eff. winter 05)

## Medicine: Otolaryngology

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### **New and changed courses in Medicine: Otolaryngology (OTO)**

#### **Professional Courses**

##### **450. Fourth Year Otolaryngology Elective (6)**

Clinical activity—35 hours; lecture—2 hours; filmviewing—0.25 hours; discussion—1 hour. Prerequisite: third- or fourth-year medical student; consent of instructor. Participation in Otolaryngology Clinic and operating room. Evaluation and management of common Otolaryngologic diseases. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) Strong

(change in existing course—eff. fall 01)

## Medicine: Pediatrics

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### New and changed courses in Medicine: Pediatrics (PED)

#### Professional Courses

##### **472. Clinical Rotation in Adolescent Medicine (6)**

Clinical activity—39 hours; lecture—1 hour. Prerequisite: consent of instructor; fourth-year medical student. Under supervision, students will see patients in the UCD clinic and at a number of community-based sites. Emphasis on the socially-mediated problems that face adolescents, including substance abuse, STD's, pregnancy, depression and suicide. One hour of lecture each week. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) Wilkes

(new course—eff. fall 05)

##### **498. Directed Group Study (1-5)**

Variable—3-15 hours. Explore in-depth various topics in Pediatrics. Extensive contact with and oversight by instructor. May be repeated for credit. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) Li

(new course—eff. fall 05)

## Medicine: Psychiatry

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### New and changed courses in Medicine: Psychiatry (PSY)

#### Professional Courses

##### 414. Psychosomatic Medicine Service (3-6)

Clinical activity—32 hours; discussion—8 hours. Prerequisite: Psychiatry Clerkship or consent of instructor; for 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 psychiatric residents. May be repeated for credit two times. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) Bourgeois, Ton

(change in existing course—eff. summer 05)

##### 419. Group Psychotherapy (6)

Clinical Activity—32 hours; discussion—8 hours. Prerequisite: psychiatry clerkship or consent of instructor of record. Senior medical students will rotate through a community mental health clinic with an extensive group psychotherapy program. Students will have opportunity to see patients individually, but the main emphasis will be to participate in cutting edge group therapies. May be repeated two times for credit. For medical students only. (H/P/F grading only)—I, II, III, IV. Ton

(new course—eff. spring 05)

##### 421. Combined Medicine-Psychiatry Clerkship (3-6)

Clinical activity—32 hours; discussion—8 hours. Prerequisite: Psychiatry Clerkship or consent of instructor; for Medical Students only. Students will rotate through the county Primary Care Clinic under the supervision of dual-boarded Psychiatry and Internal Medicine/Family Practice Faculty to provide medical care of indigent and uninsured patients as well as primary care for psychiatry patients. May be repeated for credit two times. (H/P/F grading only.)—I, II, III, IV. (I, II, III, IV.) McCarron, Onate, Ton

(new course—eff. spring 05)

## Medicine: Radiation: Oncology

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### **New and changed courses in Medicine: Radiation: Oncology (RON)**

#### **Upper Division Courses**

##### **190. Molecular and Cellular Radiation Biology Seminar (1)**

Lecture—1 hour. Topics in radiation biology and physics given by senior scientists. Focus on cellular response to ionizing radiation, radiation risk assessment, DNA damage and repair, and radiation dosimetry and imaging. May be repeated for credit when topic differs. (P/NP grading only.)—I, II, III. (I, II, III.) Lui, Vijayakumar (new course—eff. fall 04)



# Medieval Studies

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## **Change in Medieval Studies Major**

The major program in Medieval Studies has changed its name to Medieval and Early Modern Studies.

# Microbiology

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## New and changed courses in Microbiology (MIC)

### Upper Division Courses

#### **102L. General Bacteriology Laboratory (3)**

Lecture/laboratory—7 hours. Prerequisite: course 102 (may be taken concurrently) and consent of instructor. Introduction to principles and laboratory methods employed in working with microorganisms. For students planning to continue the study of microbiology or to use microorganisms as tools for the study of genetics and biochemistry.—I, II, III. Igo

(change in existing course—eff. spring 05)

#### **105. Bacterial Diversity (3)**

Lecture—3 hours. Prerequisite: consent of instructor; courses 102 and 102L; Biological Sciences 102; Biological Sciences 103 recommended. Survey of the major groups of bacteria emphasizing diversity of energy metabolism, morphology and natural history. Not open for credit to students who completed course 105 in 2005 or earlier.—II. (II.) Parales

(change in existing course—eff. spring 05)

#### **105L. Bacterial Diversity Laboratory (3)**

Laboratory—9 hours. Prerequisite: consent of instructor; courses 102 and 102L; course 105 (may be taken concurrently); Biological Sciences 102; Biological Sciences 103 recommended. Laboratory—nine hours (eight hours scheduled lab periods; one hour during open laboratory). Isolation and characterization of bacterial strains from various habitats. Includes methods for determination of evolutionary relationships among groups. Not open for credit to students who completed course 105 in 2005 or earlier.—II. (II.) Nelson, Parales

(new course—eff. spring 05)

## Middle East/South Asia Studies

### New Minor in Middle East/South Asia Studies

(College of Letters and Science)

The Program in Middle East/South Asia Studies takes an interdisciplinary approach to the study of this important world area. Participating faculty are drawn from a variety of departments and programs, including Anthropology, Asian American Studies, Comparative Literature, English, History, Religious Studies and Women and Gender Studies.

The minor in Middle East/South Asia Studies offers students a unique opportunity to study exchanges, complementarities, and correspondences in the region in religion, family structures, gender relations, media, literature and film, history, anthropology, law, political economy, international relations, development, diasporas, urbanism, and other themes.

#### Minor Program Requirements:

|   | UNITS        |
|---|--------------|
| <b>Middle East/South Asia Studies</b> .....   | <b>20-24</b> |
| Middle East and South Asian Studies 100.....  | 4            |
| Choose one course from Anthropology 142;<br>Comparative Literature 166; History 190A, 190B, 190C,<br>193A, 193B; Religious Studies 160, 162;<br>Women's Studies 178A, 184.....  | 4            |
| Choose one course from Anthropology 145; History 102Q,<br>196A, 196B; Geography 126; Religious Studies 168, 170;<br>Women's Studies 178B.....   | 4            |
| Additional Electives from Core Course list (below) .....  | 8-12         |
| Core Course List: Anthropology 142, 145; Comparative<br>Literature 166; History 102Q, 190A, 190B, 190C, 193A,<br>193B, 196A, 196B; Geography 126; Middle East and<br>South Asian Studies 180, 192, 198, 199; Religious Studies<br>160, 162, 168, 170; Women's Studies 178A, 178B, 184 |              |

**Note:** With prior consultation with an adviser, students can petition the Program Committee in advance to accept other elective courses toward the minor program. Under no circumstances may more than one lower division course be offered in satisfaction of requirements for the minor.

**Note:** With prior consultation with an adviser, students can petition the Program Committee to accept more than four units of Middle East and South Asian Studies 192, 198, and/or 199 towards the minor program.

Minor adviser. Consult the Department of Anthropology, 330 Young Hall, (530) 752-0745 or 752-0746.

### New and changed courses in Middle East and South Asian Studies (MSA)

#### Upper Division Courses

#### 100. Middle East and South Asia: Comparative Perspectives (4)

Lecture—3 hours; extensive writing. Ethnographic and historical points of intersection and divergence in various aspects of the Middle East and South Asia in precolonial, colonial, and postcolonial societies. Anthropological, historical, and theoretical debates surrounding the region. GE credit: ArtHum, Div, Wrt.—I, II, III. (I, II, III.)

(new course—eff. summer 04)

#### 180. Topics in Middle East and South Asian Studies (4)

Lecture—3 hours; extensive writing. Comparative perspective on the Middle East and South Asia. Topics may include modernity, religious traditions, colonialism, subalternity and social movements, gender and sexuality, history and memory, science and development, ritual and performance, public culture, diasporas. May be repeated one time for credit. GE credit: ArtHum, Div, Wrt.—I, II, III. (I, II, III.)

(new course—eff. fall 04)

#### 192. Internship (1-12)

Internship—3-36 hours. Prerequisite: course 100. Supervised internship on and off campus in the area of Middle East and South Asia Studies. May be repeated for up to 12 units of credit. (P/NP grading only.)

(new course—eff. summer session I 04)

#### 198. Directed Group Study (1-5)

Prerequisite: course 100. (P/NP grading only.)

(new course—eff. summer session II 04)

#### 199. Special Study for Advanced Undergraduates (1-5)

Prerequisite: course 100. (P/NP grading only.)

(new course—eff. summer session II 04)

## Molecular, Cellular, and Integrative Physiology (A Graduate Group)

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### New and changed courses in Molecular, Cellular and Integrative Physiology (A Graduate Group) (MCP)

#### Graduate Courses

##### **210L. Physiology Laboratory Rotations (5)**

Laboratory—15 hours. One mandatory 10-week rotation and up to two more voluntary rotations. Students will learn techniques and perform experiments related to a particular research problem. At the end of the 10-week period in the laboratory, students will give a short talk and hand in a research paper.—I, II, III, IV. (I, II, III, IV.)  
Widdicombe, Zheng

(new course—eff. fall 05)

##### **214. Neurophysiology (4)**

(cancelled course—eff. fall 05)

##### **218. Topics in Circulatory Pathophysiology (3)**

(cancelled course—eff. fall 07)

# Music

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## New and changed courses in Music (MUS)

### Lower Division Courses

#### 28. Introduction to African American Music (4)

Lecture/discussion—3 hours; discussion—1 hour; listening; project. Survey of African American music, such as spirituals, blues, ragtime, jazz, theater, gospel, R&B, rap, and art music. Emphasis on historical and sociocultural contexts, as well as African roots. GE credit: Div, Wrt.—III. Graham

(change in existing course—eff. fall 05)

### Upper Division Courses

#### 127. Music from Latin America (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Examination of music from Latin America. Characteristic music (i.e. tango, bossa nova, salsa, musica motena, musica andina) as well as its implications in other musical genres. Taught in Spanish. Not open to students who have taken Spanish 171 or 171S. (Same course as Spanish 171) Offered in alternate years.—II. Ortiz

(change in existing course—eff. fall 06)

#### 129. World Music (4)

(cancelled course—eff. winter 05)

#### 129A. Musics of the Americas (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3A or 3B recommended. 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. Not offered every year. GE credit: ArtHum, Div, Wrt.—Graham

(new course—eff. fall 04)

#### 129B. Musics of Africa, Middle East, Indian Subcontinent (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3A or 3B recommended. Survey of music cultures 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. Not offered every year. GE credit: ArtHum, Div, Wrt.—Graham

(new course—eff. fall 04)

#### 129C. Musics of East and Southeast Asia (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3A or 3B recommended. 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. Not offered every year. GE credit: ArtHum, Div, Wrt.—Graham

(new course—eff. fall 04)

#### 129D. Folk Musics of Europe (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: course 3A or 3B recommended. 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, form, etc.). Introduction to ethnomusicological theory, methods, approaches. Not offered every year. GE credit: ArtHum, Div, Wrt.

(new course—eff. fall 04)

#### 148. Hindustani Vocal Ensemble (2)

Rehearsal—2 hours. Basics of Hindustani music through theory and practice. Fundamentals of raga (mode) and tala (rhythms) with special emphasis on improvisation, a central feature of khyal (singing style). Five ragas each quarter. May be repeated up to six times for credit. (P/NP grading only.)—I, II. (I, II.) Sahai

(new course—eff. fall 04)

#### 195. Senior Project (2)

Project—6 hours. Prerequisite: Consent of instructor and undergraduate advisor. 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). Restricted to music majors with senior standing.—I, II, III. (I, II, III.)

(new course—eff. spring 05)

## Nature and Culture

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### **New and changed courses in Nature and Culture (NAC)**

#### **Upper Division Courses**

##### **130. The Nature of Exploration (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: upper division standing. Writings and drawings of a historical period of exploration, with a focus on descriptions of nature. Consideration of what representations of the enterprise of exploration reveal about the cultural values of the explorers, and how those values persist. Offered in alternate years. GE credit: ArtHum, Wrt.—I.

(new course—eff. fall 04)

# Neurobiology, Physiology, and Behavior

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## New and changed courses in Neurobiology, Physiology, and Behavior (NPB)

### Lower Division Courses

#### 12. The Human Brain and Disease (3)

Lecture—3 hours. Normal function and diseases of the human brain and nervous system. Diseases discussed include Parkinson's, Alzheimer's, leprosy, amnesia and schizophrenia. Intended for non-science majors. Not open for credit to students who have completed courses 100, 101, 112, or Psychology 121. GE credit: SciEng.—I. Recanzone

(change in existing course—eff. spring 05)

#### 12G. Understanding the Human Nervous System (1)

(cancelled course—eff. spring 05)

#### 14. Illusions: Fooling the Brain (3)

Lecture—3 hours. Introduction to perceptual processing in the human nervous system; illusions. GE credit: SciEng.—II. (II.) Ditterich

(new course—eff. winter 05)

### Upper Division Courses

#### 101. Systemic Physiology (5)

Lecture—5 hours. Prerequisite: Biological Sciences 1B; Physics 1B or 7C strongly recommended. Systemic physiology with emphasis on aspects of human physiology. Functions of major organ systems, with the structure of those systems described as a basis for understanding the functions. Only three units of credit awarded for students having taken Biomedical Engineering 116.—I, II, III. (I, II, III.) Debello, Goldberg, Furlow, Ishida, Sillman, Usrey, Weidner

(change in existing course—eff. fall 05)

#### 165. Neurobiology of Speech Perception (3)

Lecture—3 hours. Prerequisite: course 100 or 101. Interdisciplinary approach to speech perception with emphasis on functional neuroanatomy and behavior. Topics include auditory processing in time and space, intelligibility in noisy environments, visual speech, evolution of vocal communication, models of speech perception, development, and hearing impairment.—I. (I.) Miller

(new course—eff. fall 05)

### Graduate Courses

#### 221. Cell and Molecular Neuroscience (6)

(cancelled course—eff. fall 05)

#### 292. Cortical Plasticity and Perception (2)

(cancelled course—eff. fall 05)

# Neuroscience

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## New and changed courses in Neuroscience (NSC)

### Graduate Courses

#### 201. Neuroanatomy (3)

Lecture—2 hours; laboratory/discussion—1 hour. Prerequisite: consent of instructor. Mix of lectures, demonstrations, and dissections, emphasizing functional significance of neuroanatomy from a biological perspective, with comparisons between human and non-human brains. Emphasis placed on functional anatomy of the nervous system, integrated with cellular, molecular, cognitive, and developmental concepts. Limited enrollment.—I. (I.) Amaral, Jones, Usrey

(new course—eff. fall 05)

#### 221. Cellular Neurophysiology (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: graduate standing or consent of instructor. Physiological aspects of cellular and subcellular organization of the nervous system. Neuronal cell biology, the structure and function of ion channels, electrical excitability, signaling cascades, sensory transduction and, mechanisms of synaptic transmission, and the cellular basis of learning and memory.—I. (I.) Trimmer, Yamoah

(change in existing course—eff. fall 05)

#### 224A. Molecular and Developmental Neurobiology (2)

Lecture/discussion—2 hours. Prerequisite: consent of instructor. Key issues in developmental and molecular neurobiology. Discussion emphasis on critical evaluation of the experiments and methods described in research papers. Readings of seminal, primary research papers, reviews, and book chapters. Reading materials will be distributed one week in advance.—II. (II.) Diaz, L'Etoile

(new course—eff. winter 06)



# Nutrition

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## New and changed courses in Nutrition (NUT)

### Upper Division Courses

#### **104. Environmental & Nutritional Factors in Cellular Regulation and Nutritional Toxicants (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 101; Biological Sciences 103 or Animal Biology 103. Cellular regulation from nutritional/toxicological perspective. Emphasis: role of biofactors on modulation of signal transduction pathways, role of specific organelles in organization/regulation of metabolic transformations, major cofactor functions, principles of pharmacology/toxicology important to understanding nutrient/toxicant metabolism. (Same course as Environmental Toxicology 104.)—III. (III.) Oteiza, Rucker  
(new course—eff. spring 05)

#### **105. Nutrition and Aging (3)**

Lecture—3 hours. Prerequisite: course 111AV and Animal Biology 103 or the equivalent. Role of nutrition in the aging process from both an organismal/cell perspective, including demographics, theories of aging, nutrition and evolution, nutritional manipulation and life-span extension, and nutrition's impact on the diseases of aging.—III. (III.) McDonald  
(new course—eff. spring 06)

#### **120AN. Nutritional Anthropology (4)**

Lecture—3 hours, discussion—1 hour. Prerequisite: course 2 or Geography 2 recommended. Nutritional anthropology from historical and contemporary perspectives; the anthropological approach to food and diet; field work methods; case histories that explore food patterns and their nutritional implications. GE Credit: Div, SciEng, SocSci.—IV.  
(new course—eff. spring 05)

#### **120BN. Nutritional Geography (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: Geography 2 recommended. Nutritional geography from historical and contemporary perspectives; the geographical approach to food and diet; cultural and environmental factors that influence dietary practices; food-related landscapes and patterns. GE Credit: Div, SciEng, SocSci.—IV.  
(new course—eff. spring 05)

### Graduate Courses

#### **219A. International Nutrition (3)**

Lecture—3 hours. Prerequisite: graduate standing; undergraduates only admitted with consent of instructor after completion of course 111AV. Epidemiology, etiology, and consequences of undernutrition, with particular focus on the nutritional problems of children and women in low income populations. Offered in alternate years.—(II). Brown, Dewey  
(change in existing course—eff. spring 05)

#### **219B. International Nutrition (3)**

Lecture—3 hours. Prerequisite: course 219A. Intervention programs to prevent or ameliorate nutritional problems in low-income populations. Planning, implementing, and evaluating nutrition intervention programs. Offered in alternate years.—III. Brown, Dewey  
(change in existing course—eff. fall 04)

## Nutrition (A Graduate Group)

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### **Change in M.S. and Ph.D. Name**

The Graduate Group has changed the name of its Nutrition M.S. and Ph.D. programs to Nutritional Biology.

# Nutrition Science

## Changes in B.S. Major Requirements for Nutrition Science Major

|  | UNITS        |
|--|--------------|
| <b>English Composition Requirement</b> .....   | <b>0-8</b>   |
| See College requirement  |              |
| <b>Preparatory Subject Matter</b> .....  | <b>60-66</b> |
| Anthropology 2 or Geography 2 or Sociology 3 .....   | 4            |
| Biological Sciences 1A, 1B, 1C .....   | 15           |
| Chemistry 2A-2B-2C and 8A-8B, or 118A-118B, or 128A-128B and 129A .....  | 21-23        |
| Mathematics 16A-16B .....  | 6            |
| Physics 1A-1B (Nutritional Biochemistry option) or Economics 1A-1B (Community Nutrition option) ....   | 6-10         |
| Sociology 46A or Psychology 41 .....   | 4            |
| Statistics 13 or Agricultural Management and Rangeland Resources 120 .....   | 4            |
| <b>Breadth/General Education</b> .....   | <b>6-24</b>  |
| Satisfaction of General Education requirement  |              |
| <b>Depth Subject Matter</b> .....  | <b>57-58</b> |
| Animal Biology 102, 103 .....  | 10           |
| Biological Sciences 101 .....  | 4            |
| Food Science and Technology 100A and 100B .....  | 8            |
| Neurobiology, Physiology, and Behavior 101, 101L .....   | 8            |
| <b>Nutritional Biochemistry option:</b>  |              |
| Nutrition 111A and 111B, 113, 116A, 116B, 117, 190 .....   | 23           |
| Additional nutrition .....   | 9            |
| <b>Community Nutrition option:</b>   |              |
| Nutrition 111A and 111B, 113, 116A, 116B, 119, 190, 192 (2 units) .....  | 25           |
| <b>Restricted Electives</b> .....  | <b>14-15</b> |
| Select one of the two options.   |              |
| <b>Nutritional Biochemistry option:</b>  |              |
| Biochemistry laboratory (Molecular and Cellular Biology 120L or an alternative selected upon consultation and approval of the faculty adviser) .....   | 6            |
| Additional courses in genetics, biochemistry, microbial biology, physiology, immunology, or toxicology, chosen from the following list in consultation with the faculty adviser .....  | 8            |
| Animal Genetics 111, Animal Science 123, 124, Anthropology 153, Biological Sciences 104, Environmental Toxicology 101, 112A, 112B, 114A, 114B, 128, Exercise Biology 101, 102, 110, Food Science and Technology 100C, 104, 123-123L, 128, Neurobiology, Physiology, and Behavior 112, 113, 114, 121, 130, 161, Molecular and Cellular Biology 121, 122, 123, 141, 150-150L, 161, 162, 163, Microbiology 102, 160, Medical Microbiology 107, 130, Psychology 108, Population, Health, and Reproduction 150, Pathology, Microbiology, and Immunology 102, 126, 127, 128. |              |
| <b>Community Nutrition option:</b>   |              |
| Economics 100, 101, or Agricultural and Resource Economics 100A, 100B .....  | 8-10         |
| Additional courses chosen from the following list in consultation with the faculty adviser .....   | 5-7          |
| African American and African Studies 100, Agricultural and Resource Economics 15, 120, 130, Agricultural Management and Rangeland Resources 150, Anthropology 101, 122, 126, 131, 133, Asian American Studies 100, Chicana/o Studies 110, 140, Communication 145, Community and Regional Development 2, 151, 152, 153, 172,  |              |

174, 175, 176, Consumer Science 100, Economics 115A, 115B, 123, 130, 151A, 151B, 162, Education 110, 153, Environmental Science and Policy 126, 165, Environmental Toxicology 101, 128, Epidemiology and Preventive Medicine 101, 160, 180, Exercise Biology 101, 102, 110, 113, 117, Food Science and Technology 104, 140, Geography 170, Human Development 100A, 100B, 100C, International Agricultural Development 10, 103, 110, 111, 195, Native American Studies 115, Political Science 105, Psychology 1, 108, 112, 130, 145, 160, 168, Sociology 145A, 145B, 154, 170.

**Unrestricted Electives**..... **6-38**  
**Total Units for the Degree**..... **180**

**Major Adviser.** B. L. Lonnerdal.

**Advising Center** for the major is located in 1202E Meyer Hall (530) 752-2512.

**Dietetics Internship.** To fulfill the academic requirements for an internship in Dietetics, choose the following courses from the categories in which they appear above: English 3 or University Writing Program 1, Psychology 1, Communication 1, Sociology 1 or 3 or Anthropology 2, Economics 1A or 1B, Nutrition 116AL-BL, 118. The following courses must be added (some of which may meet restricted elective requirements): Agricultural and Resource Economics 112; Community and Regional Development 173 or Education 110; Food Science and Technology 101A, 101B, 108; Food Service Management 120, 120L, 122; Food Science and Technology 104, 104L or Microbiology 102, 102L. Students intending to apply for admission to a dietetic internship should contact the Advising Office no later than the first quarter of the junior year for information on procedures.

**Graduate Study.** The Department of Nutrition offers programs of study and research leading to the M.S. and Ph.D. degrees in Nutrition. For information on graduate study contact the graduate adviser. See also the Graduate Studies chapter of this catalog.

# Philosophy

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## New and changed courses in Philosophy (PHI)

### Upper Division Courses

#### 104. The Evolution of Mind (4)

Lecture/discussion—3 hours; term paper. Prerequisite: one previous Philosophy course or instructor permission. The interpretation of human thought and behavior through the lens of evolutionary theory. Topics include the nature/nurture debate concerning cognitive and other mental capacities and traits, and the interaction between evolution, learning and development. GE Credit: SocSci.—III. Cummins, Cummins

(new course—eff. spring 05)

#### 157. Twentieth Century European Philosophy (4)

Lecture/discussion—4 hours. Prerequisite: one course in Philosophy. Survey of the main movements in twentieth century philosophy on the European continent, including phenomenology, existentialism, post-structuralism and post-modernism. Philosophers covered are Husserl, Heidegger, Sartre, Foucault, Derrida. GE credit: ArtHum.—II. Matthey

(change in existing course—eff. fall 05)

# Physics

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## New and changed courses in Physics (PHY)

### Graduate Courses

#### 240C. Condensed Matter Physics (3)

Lecture—3 hours. Prerequisite: course 240AB. Review of second quantization. Interacting electron gas, electron-phonon interaction and effects, including instabilities of electronic systems. Topics in the theory of superconductivity and magnetism.—III. (III.)

(change in existing course—eff. spring 05)

#### 240D. Solid State Physics (3)

(cancelled course—eff. spring 05)

#### 262. Early Universe Cosmology (3)

Lecture—3 hours. Prerequisite: second year standing in Physics graduate program or consent of instructor. Introduction to early universe cosmology: the Big Bang, inflation, primordial nucleosynthesis, dark matter, dark energy, and other topics of current interest.—I. (I.)

(new course—eff. spring 05)

#### 263. Cosmic Structure Formation (3)

Lecture—3 hours. Prerequisite: course 260. Growth of structure from small density inhomogeneities in the early universe to the diverse structures observable today. Use of observable properties (cosmic microwave background, gravitational lensing, peculiar velocities, number density, etc.) to constrain models of structure formation and fundamental physics.—III. (III.)

(new course—eff. spring 05)

#### 265. High Energy Astrophysics and Radiative Processes (3)

Lecture—3 hours. Prerequisite: graduate standing in physics or consent of instructor. Survey course covering galactic and extragalactic X-ray and gamma-ray astronomy, radiative processes, and techniques of high-energy astrophysics.—I. (I.)

(new course—eff. fall 04)

#### 266. Data Analysis for Astrophysics (3)

Lecture—3 hours. Prerequisite: graduate standing in physics or consent of instructor. Survey course covering measurement and signal analysis techniques for astrophysics and cosmology throughout the electromagnetic spectrum.—II. (II.)

(new course—eff. spring 05)

#### 267. Observational Extragalactic Astronomy & Cosmology (3)

Lecture—3 hours. Prerequisite: graduate standing in physics or consent of the instructor. Survey course covering current areas of research on extragalactic objects, their physical properties, origin, evolution, and distribution in space.—III. (III.)

(new course—eff. spring 05)

#### 270. Current Topics in Physics Research (2)

Lecture/discussion—2 hours. Prerequisite: graduate standing in physics or consent of instructor. Reading and discussion to help physics graduate students develop and maintain familiarity with the current and past literature in their immediate field of research and related areas. May be repeated for credit when topics differ. (S/U grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 04)

#### 280. Seminar in Ethics for Scientists (2)

Seminar—2 hours. Prerequisite: 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 Chemical Engineering and Materials Science 280 and Chemistry 280.) (S/U grading only.)—III. (III.)

(new course—eff. spring 05)

### Professional Courses

#### 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 the differences between conventional and active-engagement instructional settings. The appropriate role of the instructor in specific instructional settings. III. (III.)

(new course—eff. fall 05)

# Plant Biology

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## **New and changed courses in Plant Biology (PLB)**

### **Upper Division Courses**

#### **170. Plant Molecular Ecology (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 1A and 1C or the equivalent. Introduction to the application of molecular genetic techniques to questions concerning ecological, genetic and evolutionary processes in plant populations. Emphasis on the use of molecular genetic information for decision making in management and conservation.—II. (II.) Jasienuk  
(change in existing course—eff. winter 05)

## Plant Biology (A Graduate Group)

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### New and changed courses in Plant Biology (PBI)

#### Graduate Courses

##### **200A. PBGG Core Course Series - Fall quarter (5)**

Lecture—3 hours; discussion—2 hours. Prerequisite: graduate standing; a broad background of undergraduate-level coursework in Plant Biology is recommended. The first of three PBGG graduate core courses. Coverage includes (1) plant genes, (2) biotechnology, (3) genomes and gene flow, (4) principles of plant systematics, and (5) the evolution of flowering plants.—I. (I.) Potter

(new course—eff. fall 05)

##### **200B. PBGG Core Course Series - Winter quarter (5)**

Lecture—3 hours; discussion—2 hours. Prerequisite: course 200A. The second of three PBGG graduate core courses. Coverage includes (1) embryo development, (2) cytoskeleton and vesicle trafficking, (3) cell walls, (4) cell growth, (5) secondary metabolism, (6) plastids and (7) senescence.—II. (II.) Labavitch

(new course—eff. fall 07)

##### **200C. PBGG Core Course Series - Spring quarter (5)**

Lecture—3 hours; discussion—2 hours. Prerequisite: course 200A and 200B. The third of three PBGG graduate core courses. Coverage includes (1) plant water relations, (2) cellular & long distance transport processes, (3) mineral nutrition, (4) environmental impacts on growth & development, (5) stress perception & responses, (6) canopy processes, and (7) plant interactions with other organisms.—III. (III.) Blumwald, Silk

(new course—eff. spring 06)

# Plant Pathology

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## New and changed courses in Plant Pathology (PLP)

### Upper Division Courses

#### **140. Agricultural Biotechnology and Public Policy (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: high school level biology, including genetics; Biological Sciences 10 recommended. Examination of the development and deployment of agricultural biotechnologies, particularly transgenic crop plants, microorganisms and animals, with consideration of conventional agriculture, public perceptions of technologies, food safety, environmental impact, public policies and regulations. GE credit: SciEng, Wrt.—III. (III.) Bruening, Williamson

(change in existing course—eff. spring 05)

### Graduate Courses

#### **205A. Diseases of Vegetable and Field Crops (3)**

Lecture/discussion—3 hours; fieldwork—3 hours. Prerequisite: course 120. Clinical study of diseases of vegetable and field crops with emphasis on etiology, epidemiology, diagnosis, and control. Field trips required. Offered in alternate years.—III. Davis, Webster

(change in existing course—eff. spring 06)

#### **205B. Diseases of Vegetable and Field Crops—Summer Field Trip (1)**

Fieldwork—3 hours. Prerequisite: courses 120 and 205A. Continuation of course 205A—four-day field trip investigating diseases of vegetable and field crops (Deferred grading only, pending completion of sequence. *S/U* grading only.)—V. (V.) Davis, Webster

(change in existing course—eff. summer session I 04)



# Political Science

## New and changed courses in Political Science (POL)

### Upper Division Courses

#### 110. The Strategy of Politics (4)

Lecture/discussion—4 hours. Introduction to game theory. Explanation of the behavior of individuals in strategic interaction. Rational and behavioral approaches. Applications to political science and other fields.—I. (I.) Fowler

(new course—eff. fall 04)

#### 140A. Comparative Electoral Systems (4)

Lecture/discussion—4 hours. Prerequisite: course 2. Workings 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 in alternate years.—II. Scheiner

(new course—eff. winter 05)

#### 144. Russian Politics and Policy (4)

Lecture/discussion—4 hours. Prerequisite: course 2 or consent of instructor. Democratization, state-building and economic reform; creation of new institutions; impacts of Soviet rule. GE credit: SocSci, Wrt.—III. (III.) Andrews

(change in existing course—eff. fall 04)

### Graduate Courses

#### 210. Research Design in Political Science (4)

Seminar—3 hours; discussion/laboratory—1 hour. Prerequisite: graduate standing. Introduction to philosophy of science and research design for political science. Topics include: logic of empirical research, overview of research design approaches for political science research.—I. (I.) Hill

(new course—eff. winter 06)

#### 211. Research Methods in Political Science (4)

Seminar—3 hours; discussion/laboratory—1 hour. Prerequisite: graduate standing. Introductory seminar introducing data analysis methods critical to basic empirical investigations in political science.—I. (I.) Gill

(change in existing course—eff. winter 06)

#### 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 PhD 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.)—II. (II.) Highton

(change in existing course—eff. winter 06)

#### 219C. Contemporary Political Theory (4)

Seminar—3 hours; term paper. Survey of important works in contemporary political theory including such writers as Nietzsche, Heidegger, Arendt, Rawls, Nozick, Sandel. May be repeated for credit if topic differs.—III. (III.) Scott

(new course—eff. fall 04)

#### 280. Bayesian Methods: for Social and Behavioral Sciences (4)

Seminar—3 hours; lab—1 hour. Prerequisite: course 212 or equivalent; graduate standing. Methodology seminar introducing Bayesian quantitative methods to issues and problems in political science and other social and behavioral sciences. Offered in alternate years.—(I.) Gill

(new course—eff. fall 05)

#### 281. Statistical Computing Issues in Political Science (4)

Seminar—3 hours; discussion/laboratory—1 hour. Prerequisite: course 213 or equivalent; graduate standing. Methodology seminar introducing computing issues in empirical models for political science and other social and behavioral sciences. Offered in alternate years.—(I.) Gill

(new course—eff. fall 05)

#### 282. Advanced Modeling of Political Behavior (4)

Seminar—3 hours; term paper. Prerequisite: course 215 or equivalent; graduate standing or consent of instructor. Applications of formal theory to political science. Review of relevant contributions in other social sciences. Consideration of advanced techniques in game theory. Rational and behavioral approaches.—III. (III.) Fowler

(new course—eff. fall 05)

#### 290G. Research in Methodology (4)

Lecture—3 hours; term paper. Prerequisite: course 212. Special research seminar on selected problems and issues in methods in political science. May be repeated three times for credit if topic varies.—I, II, III. (I, II, III.) Fowler

(new course—eff. fall 05)

## Population Biology

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### New and changed courses in Population Biology (PBG)

#### Graduate Courses

**250A. Interdisciplinary Approaches to Biological Invasions (4)**

Lecture/discussion—4 hours. Prerequisite: graduate standing. An integrative consideration of biological invasions, including an overview of concepts from ecology, ecological theory, evolution, genetics, philosophy, and other areas. Emphasis on potential contributions of each area for interdisciplinary problem-solving.—I. (I.)

(new course—eff. fall 04)

**250B. Interdisciplinary Approaches to Biological Invasions (4)**

Lecture/discussion—4 hours. Prerequisite: graduate standing. An integrative consideration of biological invasions, including an overview of concepts from history, sociology, communications, law, policy, management, and other areas. Emphasis on potential contributions of each area for interdisciplinary problem-solving.

—II. (II.)

(new course—eff. fall 04)

**251. Collaborative Project in Biological Invasions (3)**

Project; discussion—1 hour. Prerequisite: course 250A, 250B, or equivalent; and consent of instructor. A year-long interdisciplinary collaborative project focusing on biological invasions, resulting in a paper or other suitable product presented at a symposium at the conclusion of the project. May be repeated up to five times. (S/U grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 04)

# Psychology

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## New and changed courses in Psychology (PSC)

### Upper Division Courses

#### 135. Cognitive Neuroscience: The Biological Foundations of the Mind (4)

Lecture—3 hours; writing. Prerequisite: courses 1, 41, and 100 or 131, or consent of instructor; course 101, 121, or 129 recommended. Neuroscientific foundations of higher mental processes including attention, memory, language, higher-level perceptual and motor processes, and consciousness. Emphasis on the neural mechanisms which form the substrates of human cognition, and the relationship of mind to brain.—I, II. (I, II.) Bunge, Janata, Raganath, Wojciulik

(change in existing course—eff. fall 05)

#### 159. Gender and Human Reproduction (4)

Lecture—4 hours. Prerequisite: course 1 and 41. Pass 1 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 social 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.)—I, II, III. Scheib

(change in existing course—eff. spring 05)

#### 165. Introduction to Clinical Psychology (4)

Lecture—4 hours. Prerequisite: courses 1, 41, 168, and either 140 or 151. Major theoretical formulations in the history of clinical psychology, from classical psychoanalysis to contemporary existentialism and behavior modification. A survey, based on lectures, films, and tapes, of what clinical psychologists do, including methods of appraisal, professional roles, and approaches to treatment.—I, II, III. (I, II, III.) Sue

(change in existing course—eff. spring 06)

#### 177. Psychobiography and Life History (4)

Lecture—4 hours. Prerequisite: course 1 or consent of instructor; course 41. Case-history research as a nonquantitative approach to studying personality. Psychological interpretation of life histories of outstanding individuals in the arts, politics, science and other areas. GE credit: SocSci, Wrt.

(change in existing course—eff. spring 06)

### Graduate Courses

#### 272. Topics in Developmental Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in Psychology or consent of instructor. Selected topics in developmental psychology, including developmental neuroscience, memory development, infancy, cognitive development, social development, child maltreatment, children and law, perceptual development, emotional development, children at risk, and adolescence, with emphasis on developmental processes and developmental theory. May be repeated for credit. Not offered every year.—I. Bunge, Ferrer, Ghetti, Goodman, Lagattuta, Rivera, Robins, Thompson, Widaman

(new course—eff. fall 05)

# Quantitative Biology and Bioinformatics

## New Minor in Quantitative Biology and Bioinformatics

(College of Agricultural and Environmental Sciences and College of Letters and Science)

The interdisciplinary minor in Quantitative Biology and Bioinformatics is an integrative program that introduces students to the quantitative and computational approaches that are redefining all disciplines in the biological sciences, from molecular and cell biology, through genetics and physiology, to ecology and evolutionary biology. Students in this minor will learn research tools that apply mathematical and computational methods, increase their insight into the strengths and limitations of quantitative approaches, and develop the interdisciplinary perspective that is now the foundation of modern biological research and training.

The minor in Quantitative Biology and Bioinformatics is open to all undergraduates regardless of major and is sponsored by the College of Biological Sciences.

### Minor Program Requirements:

|  | UNITS        |
|--|--------------|
| <b>Quantitative Biology and Bioinformatics .....</b>   | <b>18-24</b> |
| Core Courses.....  | 8-12         |
| Programming: Computer Science Engineering 10 or 30 or the equivalent* .....  | 4            |
| Quantitative Biology: Biological Sciences 132 or Mathematics 124.....  | 4            |
| Bioinformatics: Computer Science Engineering 124 .....   | 4            |
| Quantitative and Computational Preparation.....  | 4            |
| Complete one course from the following: Applied Science Engineering 115; Computer Science Engineering 110; Mathematics 128A, 128B, 128C, 131; Statistics 130A, 131A, 141A .....  | 4            |
| Restricted Electives .....   | 6-8          |
| Complete two or more courses from the following list to achieve a total of 18-24 units: Animal Genetics 120; Computer Science Engineering 122A, 165A; Environmental Science and Policy 121; Evolution and Ecology 102, 103, 104, 175; Molecular and Cellular Biology 123, 143, 182; Neurobiology, Physiology and Behavior 105, 131, 163; Wildlife, Fish and Conservation Biology 122 |              |
| Restrictions: No more than two upper division courses from a single department/section may be offered in satisfaction of the minor requirements. Only one course used to satisfy a requirement for the minor may be applied toward a student's major.  |              |

\*The programming requirement may be satisfied by previous experience and therefore may not entail college course credit. Please see your minor adviser for this determination and its possible impact on your unit requirements for the minor.

Minor adviser. Consult the College of Biological Sciences Dean's Office, 202 Life Sciences Addition, (530) 752-0410.

# Religious Studies

## New and changed courses in Religious Studies (RST)

### Lower Division Courses

#### 3D. Topics in Comparative Religion (4)

Lecture—3 hours; discussion—1 hour. Introduction to the methods used in comparative religion, focusing on a particular theme in several religious traditions: (A) The Experiential Dimension: Pilgrimage; (B) The Mythic Dimension: Death and the After-life; (C) The Ritual Dimension: Sacrifice; (D) The Existential Dimension: Conversion. May be repeated for credit. Offered in alternate years. GE Credit: Div, ArtHum, Wri.—II. Tezcan

(new course—eff. winter 06)

#### 60. Introduction to Islam (4)

Lecture/discussion—3 hours; extensive writing. Introduction to topics central to the Islamic tradition. Muhammad, the Qur'an, Islamic law, theology, philosophy, cosmology, worship, and mysticism. Race and gender in Islam, Islamic revival, and varying experiences of Islam in different historical and cultural settings. Offered in alternate years. GE credit: ArtHum, SocSci, Div, Wrt.—(I.) Tezcan

(change in existing course—eff. spring 05)

#### 65C. The Qur'an and Its Interpretation (4)

Lecture/discussion—3 hours; extensive writing. The Qur'an, its history, its various functions in the lives of Muslims, and its different interpretations. Quranic themes such as God and humankind, nature and revelation, eschatology and Satan. Islam and other religions; women, gender, and sexuality. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—(III.) Tezcan

(change in existing course—eff. spring 05)

#### 68. Hinduism (4)

Lecture—3 hours; writing. Hindu tradition from ancient to modern times. Multiplicity of religious forms within Hinduism with mention of Jainism, Buddhism, and Sikhism and their relation to the mainstream of Hindu religion. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—I.

(new course—eff. fall 02)

#### 75. Introduction to Chinese Philosophy (4)

Lecture/discussion—4 hours. Introduction to Chinese philosophy from classical pre-modern times; emphasis on basic concepts and their impact on social conduct; the Age of Philosophers, the Han synthesis, the medieval Buddhist contribution. Not offered every year.—Lai

(change in existing course—eff. summer II 04)

### Upper Division Courses

#### 120. Religion, Magic and Science (4)

Lecture—3 hours; extensive writing. Religion, magic, and science from the middle ages to the present. Contrast between modern scientific methodology and religious and magical thinking. (Same course as Science and Technology Studies 120.) Offered in alternate years. GE credit: ArtHum, Div, Wrt.—(I.) Coudert

(new course—eff. fall 05)

#### 142. Tyndale and the Beginnings of the English Bible (4)

(cancelled course—eff. fall 04)

#### 160. Introduction to Islamic Thought (4)

Lecture—3 hours; extensive writing. Prerequisite: course 60 recommended. The development of Islamic thought from the first centuries of Islam to the eighteenth century. Theology, philosophy, ethics, Sufism, historiography, political theory, fundamentalism, al-Farabi, al-Ghazzali, Ibn Rushd, Tusi, Ibn al-Arabi, Rumi, Molla Sadra, Ibn Khaldun, Ibn Abd al-Wahhab. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt.—II. Tezcan

(new course—eff. fall 04)

#### 162. Introduction to Islamic Law (4)

Lecture—3 hours; extensive writing. Prerequisite: course 60 recommended. The development of Islamic law in the formative centuries of Islam, ca. 600-1000, as well as its adaptation to changing economic, social, and political conditions in subsequent periods. Legal schools, legal theory, the Shari'a, reformist movements, human rights. Offered in alternate years. GE credit: ArtHum or SocSci, Div, Wrt.—II. Tezcan

(new course—eff. fall 04)

#### 168. Hinduism (4)

(cancelled course—eff. fall 02)

#### 170. Buddhism (4)

Lecture—3 hours; term paper. Buddhism in its pan-Asian manifestations, from its beginning in India to its development in Sri Lanka and Southeast Asia, Central Asia, China and Japan; teachings and practices, socio-political and cultural impact. Offered in alternate years.—III. Lai

(change in existing course—eff. spring 05)

#### 172. Ch'an (Zen) Buddhism (4)

Lecture/discussion—3 hours; term paper. Doctrines and methods of the Ch'an Buddhism, both ancient and modern. Review of ritual techniques, including meditation.—II. Lai

(change in existing course—eff. spring 05)

### Graduate Courses

#### 201. Religion and the Body (4)

Seminar—3 hours; term paper. Prerequisite: graduate student standing. Some institutionalized religions view the body as the source of sin, requiring repression to save the soul. Yet, other traditions also exist, in which the body is viewed positively. This course investigates cultural factors which account for this difference. Offered in alternate years. (III.) Coudert

(new course—eff. fall 05)

## Russian

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### New and changed courses in Russian (RUS)

#### Lower Division Courses

##### **45. Russian Fantasy and Science Fiction (4)**

Lecture/discussion—3 hours; extensive writing. Genres of fantasy and science fiction in Russian literature from pre-revolutionary to post-Soviet times. Topics include the role of science and the supernatural in literature, history and types of science fiction. GE credit: ArtHum, Div, Wrt.—III. (III.) Stuchebrukhov

(new course—eff. spring 06)

#### Upper Division Courses

##### **138. Pushkin's Eugene Onegin (4)**

Lecture/Discussion—3 hours; term paper. Prerequisite: course 101C, or consent of instructor. Detailed analyses of Pushkin's novel Eugene Onegin; its style, syntax, and links to Russian History and culture. GE Credit: ArtHum, Div, Wri.—II. Druzhnikov

(new course—eff. spring 05)

## Science and Society

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### New and changed courses in Science and Society (SAS)

#### Lower Division Courses

##### 4. Water in Popular Culture (3)

Film viewing—2 hours; discussion—1 hour. Importance of water in many aspects of society as revealed through a survey of its depictions in film. GE credit: SciEng, SocSci, Wrt.—I. (I.) Pasternack  
(new course—eff. fall 05)

##### 8. Water Quality at Risk (3)

Lecture—2 hours; discussion—1 hour. Natural and human threats to water quality. Balance of science and policy in all aspects of attaining, maintaining, and managing water quality, water contamination. Decoding popular media coverage of water quality and water contamination. GE credit: SciEng, SocSci, Wrt. (Same course as Environmental and Resource Sciences 8.)—II. (II.) Hernes  
(new course—eff. winter 06)

##### 10. Water and Power and Society (3)

Lecture—2 hours; discussion—1 hour. Water resources issues. How water has been used to gain and wield socio-political power. Water resources development in California as related to current and future sustainability of water quantity and quality. Roles of science and policy in solving water problems. (Same course as Hydrologic Science 10.) GE credit: SciEng, SocSci, Wrt.—III. (III.) Fogg  
(new course—eff. spring 05)

##### 20. Genetics and Society (4)

Lecture—3 hours; discussion—1 hour. Not open for credit to students who have completed course 140. Basic concepts of genetics, modern methods of biotechnology, the process of scientific discovery and the public perception of the process; present and future impact of genetics on society. GE credit: SciEng or SocSci, Wrt.—I, II, III. (I, II, III.) Cook, Epstein, Falk, Gilbertson, Ronald  
(change in existing course—eff. winter 05)

##### 25. Global Climate Change: Convergence of Biological, Geophysical, & Social Sciences (3)

Lecture—2 hours; discussion—1 hour. Causes of global climate change and the biological, geophysical, and social consequences of such change. Methods used by different scientists for predicting future events. Complexity of global affairs. Decision making under uncertainty. GE Credit: Div, SciEng, SocSci, Wri.—II. (II.) Bloom  
(new course—eff. winter 06)

#### Upper Division Courses

##### 130. Contemporary Leadership (4)

Lecture—3 hours; seminar—1 hour. Prerequisite: consent of instructor. Leadership, including issues, skills, and practices as they relate to individuals, organizations, diverse social settings and communities. Written and verbal communications, personality styles for collaborative work, and ethics. Limited enrollment.—II, III. (II, III.)  
(change in existing course—eff. winter 06)

##### 190X. Science & Society Seminar (1-4)

Seminar—1-4 hours. Prerequisite: upper division standing and consent of instructor. In-depth examination at an upper division level of a special topic in Science and Society. Emphasis upon student participation in learning. Emphasis upon student participation in learning. May be repeated for credit. Limited enrollment. (P/NP grading only.)—I, II, III. (I, II, III.)  
(change in existing course—eff. fall 05)

# Science and Technology Studies

## New Major for Science and Technology Studies

(College of Letters and Science)

Joseph Dumit, Ph. D., Program Director

Program Office, 1238 Social Sciences and Humanities Building  
(530) 752-9621

World Wide Web: <http://sts.ucdavis.edu>

### Committee in Charge

Joan Cadden, Ph.D. (*History*)

Marisol de la Cadena, Ph.D. (*Anthropology*)

Patrick Carroll, Ph.D. (*Sociology*)

Joseph Dumit, Ph.D. (*Anthropology, Science and Technology Studies*)

James Griesemer, Ph.D. (*Philosophy*)

Kevin D. Hoover, D. Phil. (*Economics*)

Catherine J. Kudlick, Ph.D. (*History*)

Chandra Mukerji, Ph.D. (*Science and Technology Studies*)

Benjamin S. Orlove, Ph.D. (*Environmental Science and Policy*)

Carolyn de la Pena, Ph.D. (*American Studies*)

Paul Teller, Ph.D. (*Philosophy*)

### The Major Program

The Science and Technology Studies (STS) major is designed to facilitate the analysis and synthesis of science, technology, and medicine in a way that actively creates connections between the varieties of perspectives and concerns in the humanities and the sciences. The STS major takes science, technology, medicine, and their social, political, economic, and cultural contexts as its objects of study. As such, the STS major draws on the research programs of faculty in a wide range of departments, including American Studies, Anthropology, Economics, Environmental Science and Policy, History, Philosophy, Political Science, Science and Technology Studies, and Sociology. Students in STS pursue a broader understanding of science than is available within traditional science majors and is also suitable for students in the social sciences interested in interpreting science, technology and medicine as part of society and culture.

**The Program.** Graduation with a degree in Science and Technology Studies requires completion of introductory courses in the social sciences and humanities, in the natural sciences, and introductory, laboratory and seminar courses in STS. Upper division work includes twelve units from each of two different, complementing areas of concentration (“modules”) and twelve units (plus prerequisites) providing depth, concentration and field work opportunities in the sciences. The modules are: I. Cultural Studies of Science and Technology; II. Ethics, Values, and Science Policy; III. History and Philosophy of Science; IV. Medicine, Society, and Culture. Courses in the modules require careful selection to make the best use of the STS major. Prerequisites for courses in the sciences can be extensive and require substantial advance planning for timely completion. Students are encouraged to take advantage of faculty and staff advising to plan their course of study.

**Career Alternatives.** The STS major will create an opportunity to analyze science and allied practices from historical, philosophical, sociological, political, anthropological, and cultural perspectives. STS prepares students for careers that must address the broader social, cultural and political ramifications of science, technology and medicine such as law, journalism, public policy, economics, government, and science education. Careers that students of STS from many universities nationwide have pursued, in addition to academic careers in STS, include employment in: systems engineering, web site design, science museums, non-profit health organizations, government service, libraries, law, medicine, veterinary medicine, dentistry, nursing, teaching, public health administration, media companies, management consultant practice, and the Peace Corps.

### A.B. Major Requirements

UNITS

#### Preparatory Subject Matter ..... 16

Science and Technology Studies 1.....4

Science and Technology Studies 20.....4

Eight units selected from American Studies 1A; Environmental Studies 1; Nature and Culture 1; Philosophy 30, 31, 32; Science and Society 1, 2, 3, 5.....8

#### Depth Subject Matter..... 44-46

Twelve units each from two of the following four modules: .....24

I. Cultural Studies of Science and Technology: Community and Regional Development 118, 162; History 139A, 139B; Nature and Culture 100, 180; Science and Technology Studies 130A, 131, 150; Sociology 176 .....12

II. Ethics, Values, and Science Policy: Agricultural and Resource Economics 120, 147; Environmental Science and Policy 165; History 185B; Nature and Culture 120; Philosophy 115, 116; Physics 137, 160; Plant Pathology 140; Political Science 171, 175; Veterinary Medicine 170.. 12

III. History and Philosophy of Science: History 135A, 135B, 136, 185A, 185B; Philosophy 104, 108, 109; Science and Technology Studies 130A, 130B, 131 .....12

IV. Medicine, Society, and Culture: Epidemiology and Preventive Medicine 101, 160; History 139A, 139B; Psychology 160; Sociology 154.....12

**Note:** Although a course may be listed in more than one module, that course may satisfy only one requirement.

Science and Technology Studies 180.....4

Science and Technology Studies 190, or 190HA-HB..... 4-6

Science Electives: Select twelve units, at least eight of which must be from upper division courses, from the Approved Science Electives list below. (Unit totals will vary with required prerequisites.)..... 12-32

**Note:** Students are strongly advised to choose science elective courses in consultation with faculty advisors. Some courses in some areas may require prerequisites too extensive to be used for the STS major.

#### Total Units for the Major ..... 60-82



**Approved Science Electives.** Courses may be drawn from any of the following approved subject areas:

Aeronautical Science and Engineering; Animal Genetics; Animal Science; Anthropology; Applied Behavioral Sciences; Applied Biological Systems Technology; Atmospheric Science; Avian Sciences; Biological Chemistry; Biological Sciences; Cell Biology and Human Anatomy; Chemistry; 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. Griesemer.

## **New and changed courses in Science and Technology Studies (STS)**

### **Upper Division Courses**

#### **120. Religion, Magic and Science (4)**

Lecture—3 hours; extensive writing. Religion, magic, and science from the middle ages to the present. Contrast between modern scientific methodology and religious and magical thinking. (Same course as Religious Studies 120.) Offered in alternate years. GE credit: ArtHum, Div, Wrt.—(I.) Coudert

(new course—eff. fall 05)

#### **161. Time: Mechanism and Measurement (4)**

Lecture/discussion—3 hours; term paper. Prerequisite: course 1. Cultural concepts of time; units and instruments of time measurement; historical differences in the social organization of time; and time measurement in twentieth-century science. GE credit: SocSci, Wrt.—(I.) Mukerji

(new course—eff. fall 05)

#### **163. History of Communication Technologies (4)**

Lecture/discussion—3 hours; term paper. History of communication technologies from the late Middle Ages to the 20th century. Questions of technology, knowledge, power and culture. Particular attention to questions about information and truth. Offered in alternate years. GE credit: SocSci.—(II.) Mukerji

(new course—eff. fall 05)

#### **165. Built Environments (4)**

Lecture—3 hours; extensive writing. Built environments, which are designed to support forms of life. Their role as carriers of cultural memory and in turning knowledge of nature into social assets. Historical constellations of knowledge, social order, and power. Offered in alternate years. GE credit: SocSci, Wrt.—(II.) Mukerji

(new course—eff. spring 05)

#### **176. Sociology of Knowledge, Science, and Scientific Knowledge (4)**

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: upper division standing preferred. Social, cultural, and historical dimensions of knowledge, especially scientific knowledge. Problems, methods, and theory in sociology of scientific knowledge. Laboratory and historical case studies. Scientific and technical knowledge in institutional and organizational contexts. (Same course as Sociology 176.)—III. (III.) Carroll

(new course—eff. fall 05)

# Sexuality Studies

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## New Minor for Sexuality Studies (SXS)

(College of Letters and Science)

The interdisciplinary minor in Sexuality Studies offers students a unique opportunity to study the human-made aspects of sexual identities, desires, and practices, which differ across cultures and historical moments, and are not reducible to biology or anatomy. The minor in Sexuality Studies core and elective courses have sexuality at their center. Additional courses invite students to integrate their study of sexuality with issues of gender; race and ethnicity; class; politics and activism; literature and popular culture; law; and other domains.

The minor is sponsored by the Program in Women and Gender Studies.

### Minor Program Requirements

UNITS

**Sexuality Studies** ..... **18-20**

One Core course:

Women and Gender Studies 170 ..... 4

Two Elective courses from the following:

Anthropology 139 BN, English 186, Epidemiology and Preventative Medicine 163, History 184, Human Development 12, Psychology 158, Science and Society 15, Women and Gender Studies 70 ..... 7-8

Sufficient courses from Additional Course List (below) or seminars/individual study by petition to achieve a total of 18-20 units ..... 7-8

Additional Course List:

American Studies 115, Asian American Studies 112, Chicana/o Studies 160, English 166, German 145, History 132, Political Science 152, Sociology 120, Women and Gender Studies 140, Women and Gender Studies 179

### Restrictions:

- (a) Students may take no more than one lower division course to satisfy requirements for the minor.
- (b) To satisfy the interdisciplinary component of the minor, students must either split their coursework roughly equally between two programs/departments or take coursework in at least three programs/departments.
- (c) Students may petition the minor adviser to accept Special Topics courses and Capstone/Senior Seminars as additional courses, as long as their course of study follows the minor's lower-division restriction and interdisciplinary requirements.
- (d) Students may petition the minor adviser to accept up to four units of registered individual study, group study or internship towards the minor program, as long as their course of study follows the minor's lower-division restriction and interdisciplinary requirements.

**Advising.** Program in Women and Gender Studies, (530) 752-4686.

# Sociology

## New and changed courses in Sociology (SOC)

### Lower Division Courses

#### 11. Sociology of Labor and Employment (4)

Lecture—3 hours; term paper. Labor and employment issues in the contemporary United States with some use of historical and comparative materials. Topics will include strategies pursued by employers and employees, labor market discrimination and the role of social policies in shaping labor markets. GE Credit: SocSci, Wri.—III. Block

(new course—eff. spring 05)

#### 30A. Intercultural Relations in Multicultural Societies (3)

Lecture—1.5 hours; discussion—1.5 hours. Macro-structural analysis of contemporary multicultural societies; immigration and assimilation in comparative perspective; social construction of racial and ethnic group identities; ethnicity and gender; group conflict and cooperation; controversies surrounding multiculturalism. First course in a two-course Multicultural Immersion Program. GE credit: SocSci, Div.—I. (I.) Cramer

(change in existing course—eff. fall 05)

#### 30B. Intercultural Relations in Multicultural Societies (3)

Lecture—1.5 hours; discussion—1.5 hours. Prerequisite: course 30A or consent of instructor. Social-psychological analysis of personal experiences living in a multicultural society; conforming to or rejecting group identity or stereotypes; managing and reducing conflict; cross-cultural communication; promises and problems of diversity at UC Davis. Second course in a two-course Multicultural Immersion Program. GE credit: SocSci, Div.—II. (II.) Cramer

(change in existing course—eff. winter 05)

### Upper Division Courses

#### 137. African American Society and Culture 1790-1990 (4)

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: course 1. Political and social transformations of African American communities between 1790 and 1990, as seen through film, literature, and music. Topics include: Black consciousness, Afro-Slave culture, The Harlem Renaissance, and contemporary Hip Hop.—III. (III.) Haynes

(new course—eff. spring 05)

#### 160. Sociology of the Environment (4)

Lecture—3 hours; term paper. Prerequisite: upper division standing in Sociology recommended. Production, consumption, and urban expansion. Basic social logics surrounding current problems of resource scarcity (environmental extractions) and excess wastes (environmental additions). Ways that society can change and reorganize itself to become more environmentally conscious and hence ecologically sustainable.—II. (II.) Beamish

(new course—eff. winter 05)

#### 171. Sociology of Violence and Inequality (4)

Lecture/discussion—4 hours. Prerequisite: upper-division standing or consent of instructor. How systems of social inequality organize the practice of violence. Definitions of violence and issues affecting the social capacity for violence. Analysis and comparison of different forms of violence associated with race, class, gender relations and social organization.—I, II. (I, II.) Jackman

(new course—eff. winter 06)

#### 174. Sociology of the Jewish Experience (4)

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: upper division standing required. The sociology of Jewish life, analyzing challenges to Jewish identity and community in the diaspora. Diversity within the Jewish community, Americanization, women, new immigrants, post-Holocaust Jewish identity, and Black-Jewish relations. Offered in alternate years.—III. Wolf

(change in existing course—eff. spring 05)

#### 176. Sociology of Knowledge, Science, and Scientific Knowledge (4)

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: upper division standing preferred. Social, cultural, and historical dimensions of knowledge, especially scientific knowledge. Problems, methods, and theory in sociology of scientific knowledge. Laboratory and historical case studies. Scientific and technical knowledge in institutional and organizational contexts. (Same course as Science and Technology Studies 176.)—III. (III.) Caroll

(change in existing course—eff. fall 05)

### Graduate Courses

#### 224. Sociology of Education (4)

Seminar—3 hours; term paper. Prerequisite: course 206 or the equivalent recommended. Overview of sociological theories accounting for the form, role, and evolution of educational systems. Emphasis on empirical research on education and social stratification and application to educational policy. Topics include tracking, racial/ethnic achievement inequalities, school organization, and the immigrant experience.—I. (I.) Grodsky

(new course—eff. spring 05)

## Soil Science

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### New and changed courses in Soil Science (SSC)

#### Upper Division Courses

##### **105. Field Studies of Soils in California Ecosystems (5)**

Prerequisite: courses 100 and 120, or equivalent recommended.  
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 climate; physical, chemical, and biological processes in soils on the landscape; and the role of soils in land use. May be repeated one time for credit.—IV. Amundson, Dahlgren, Singer, Southard  
(change in existing course—eff. summer special session 06)

##### **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.  
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 SSC 105; requires additional work for graduate credit. May be repeated once for credit if geographic locale changes. Limited enrollment.—IV. (IV.) Amundson, Dahlgren, Singer, Southard  
(new course—eff. spring 06)

# Spanish

## New and changed courses in Spanish (SPA)

### Lower Division Courses

#### 2V. Elementary Spanish (5)

Lecture/discussion—2 hours; web electronic discussion—3 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 to students who have taken course 2 or 2S.—I, II, III, IV. (I, II, III, IV.)3V. Elementary Spanish (5)

(new course—eff. spring 05)

#### 3V. Elementary Spanish (5)

Lecture/discussion—2 hours; web electronic discussion—3 hours. Prerequisite: course 2, 2S, or 2V. Completion of grammar 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 course 3 or 3S.—I, II, III, IV. (I, II, III, IV.)

(new course—eff. spring 05)

### Upper Division Courses

#### 141. Introduction to Spanish Culture (4)

Lecture—3 hours; term paper. Prerequisite: course 24, 24S, or 33. Introduction to history, geography and culture of Spain. Art, history of ideas, and everyday cultural manifestations. Introduction to critical reading and textual analysis. Not open for credit to students who have completed course 141S. GE credit: ArtHum, Div.—I. (I.) González, Martínez-Carazo

(change in existing course—eff. fall 05)

#### 141S. Introduction to Spanish Culture (4)

Lecture—3 hours; term paper. Prerequisite: course 24, 24S, or 33. Introduction to history, geography and culture of Spain. Art, history of ideas, and everyday cultural manifestations. Introduction to critical reading and textual analysis. Offered in a Spanish speaking country under the supervision of UC Davis faculty. Not open for credit to students who have completed course 141. GE credit: ArtHum, Div.—III. (III.) Martínez-Carazo

(change in existing course—eff. spring 06)

#### 144. Topics in Spanish Cultural Studies (4)

Lecture—3 hours; project. Prerequisite: course 24, 24S, or 33. Study of specific historical tendencies in Spanish culture(s) from the Romans to the present. Sources studied may include literature, film, art, journalism, and performance. Approaches to material may address issues of aesthetics, politics, identity, and globalization. May be repeated one time for credit. GE credit: ArtHum.—I. (I.) González, Martínez-Carazo

(new course—eff. fall 05)

#### 160. Latin American Women Writers in Translation (4)

Lecture/discussion—3 hours; term paper. Prerequisite: upper division standing or consent of instructor. Latin American women writers from the 19th and 20th centuries. Recent theoretical approaches to literature by women in Latin America. Discussions in English of works by Matto de Turner, Avellaneda, Storni, Ocampo, Agustini, Mistral, Castellanos, and others. Offered in alternate years. GE credit: ArtHum, Div, Wrt.—III. (III.) Peluffo

(new course—eff. spring 05)

#### 170. Introduction to Spanish American Culture (4)

Lecture—3 hours; term paper—1 hour. Prerequisite: course 24, 24S, or 33. Introduction to history, geography and culture of Spanish America. Multiple genres of cultural production and representation, with a focus on cultural diversity and regional difference. Introduction to critical reading and textual analysis. Not open for credit for students who have completed course 170S. GE credit: ArtHum, Div.—III. (III.) Bejel, Irwin, Lazzara, Peluffo

(change in existing course—eff. fall 05)

#### 170S. Introduction to Spanish American Culture (4)

Lecture—3 hours; project. Prerequisite: course 24, 24S, or 33. Introduction to history, geography and culture of Spanish America. Multiple genres of cultural production and representation, with a focus on cultural diversity and regional difference. Introduction to critical reading and textual analysis. Offered in a Spanish-speaking country. Not open for credit for students who have completed course 170. GE credit: ArtHum, Div.—III. (III.) Colombi

(change in existing course—eff. spring 06)

#### 171. Music from Latin America (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Examination of music from Latin America. Characteristic music (i.e., tango, bossa nova, salsa, musica motena, musica andina) as well as its implications in other musical genres. Taught in Spanish. Not open to students who have taken course 171S or Music 127. (Same course as Music 171.) Offered in alternate years.—II.

(change in existing course—eff. spring 04)

#### 171S. Music from Latin America (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: consent of instructor. Examination of music from Latin America. Characteristic music (i.e., tango, bossa nova, salsa, musica motena, musica andina) as well as its implications in other musical genres. Taught in Spanish and in a Spanish speaking country under the supervision of UC Davis faculty. Not open to students who have taken course 171 or Music 127.—II. (II.)

(change in existing course—eff. winter 03)

#### 173. Cinema and Latin American Culture (4)

Lecture/discussion—3 hours; film viewing—3 hours. Prerequisite: course 24, 24S, or 33. Understanding Latin American cultures through cinema. History and critical analysis of Latin American film. Focus on a national cinematic tradition. Comparative experiences in different parts of Latin America and/or a particular era. Conducted entirely in Spanish. May be repeated one time for credit. GE Credit: ArtHum, Div.—Irwin

(new course—eff. spring 05)

#### 175. Topics in Spanish American Cultural Studies (4)

Lecture—3 hours; project—1 hour. Prerequisite: course 24, 24S, or 33. Specific historical tendencies and issues in Spanish American culture(s) from precolombian times to present. Sources studied may include literature, film, art, journalism and performance. Approaches to material may address issues of aesthetics, politics, identity, and globalization. May be repeated one time for credit if content differs. GE credit: ArtHum, Div.—III. (III.) Bejel, Irwin, Lazzara, Peluffo

(new course—eff. fall 05)

**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. Group study of a special topic drawn from Spanish literary or cultural studies. Independent research project. May be repeated one time for credit if content differs. Limited enrollment.—II. (II.) Altisent, Armistead, González, Martin, Martinez-Carazo

(new course—eff. fall 06)

**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. Group study of a special topic drawn from Latin American literary or cultural studies. Independent research project. May be repeated one time for credit if content differs. Limited enrollment.—III. (III.) Bejel, Egan, Irwin, Lazzara, Peluffo

(new course—eff. fall 06)

# Statistics

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## New and changed courses in Statistics (STA)

### Graduate Courses

#### **250. Topics in Applied and Computational Statistics (4)**

Lecture—3 hours; lecture/discussion—1 hour. Prerequisite: course 131A; course 232A recommended, not required. Resampling, non-parametric and semiparametric methods, incomplete data analysis, diagnostics, multivariate and time series analysis, applied Bayesian methods, sequential analysis and quality control, categorical data analysis, spatial and image analysis, computational biology, functional data analysis, models for correlated data, learning theory. May be repeated for credit with consent of graduate advisor. Not offered every year.—I, II, III.

(change in existing course—eff. spring 06)

# TechnoCultural Studies

## New major in Technocultural Studies

### A.B. Major Requirements:

|  | UNITS     |
|--|-----------|
| <b>Preparatory Subject Matter</b> .....  | <b>28</b> |
| Technocultural Studies 1, 2, 4, 5, 6, 7A-E.....  | 24        |
| American Studies 1A or 5.....  | 4         |
| <b>Depth Subject Matter</b> .....  | <b>44</b> |
| Technocultural Studies 190, 191.....   | 8         |
| <i>Production emphasis</i> .....   | 32        |
| Choose five from production based Technocultural Studies 100, 101, 103, 104, 110, 111, 112, 113, 121, 122, 123, 192, plus two from Technocultural Studies 120, 150, 151, 152, 153, 154, 155, 158, 159, plus a four-unit class from another department or program relevant to the student's area of concentration, as approved by Technocultural Studies. |           |
| <i>Studies emphasis</i> .....  | 32        |
| Choose two from production based Technocultural Studies 100, 101, 103, 104, 110, 111, 112, 113, 121, 122, 123, 192, plus five from Technocultural Studies 120, 150, 151, 152, 153, 154, 155, 158, 159, plus a four-unit class from another department or program relevant to student's area of concentration, as approved by Technocultural Studies.     |           |
| Technocultural Studies 198.....  | 4         |
| <b>Total Units for the Major</b> .....   | <b>72</b> |

**Major adviser.** See Program Office.

## New and changed courses in Technocultural Studies (TCS)

### Lower Division Courses

#### 2. Critiques of Media (4)

Lecture/discussion—3 hours; term paper. Introduction to different forms of critical analysis of media, with focus on creative responses to the media within visual arts, media arts, and net culture. Response of artists to the power of mass media, from early forms of photo-montage through contemporary “culture-jamming” and alternative media networks. GE credit: ArtHum.—II. Dyson

(change in existing course—eff. fall 05)

### Upper Division Courses

#### 103. Interactivity and Animation (4)

Lecture/discussion—3 hours; laboratory—3 hours. Fundamentals of creating interactive screen-based work. Theories of interactivity, linear versus non-linear structures, and audience involvement and participation. Use of digital production tools to produce class projects.—I, III. (I, III.)

(change in existing course—eff. fall 04)

#### 197T. Tutoring in Technocultural Studies (1-5)

Tutorial—3-15 hours. Prerequisite: consent of instructor. Undergraduates assist the instructor by tutoring students in one of the department's regularly scheduled courses. May be repeated for credit up to eight units. (P/NP grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 05)

#### 199. Special Study for Advanced Undergraduates (1-5)

Prerequisite: consent of instructor. Guided study with faculty member in independent scholarly activity. May be repeated for credit up to eight units. (P/NP grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 05)



# Textiles and Clothing

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## **New and changed courses in Textiles and Clothing (TXC)**

### **Upper Division Courses**

#### **174. Introduction to World Trade in Textiles and Clothing (4)**

Lecture—3 hours; discussion—1 hour. Prerequisite: course 8.  
Structure of the global fiber/textile/apparel complex and its distribution patterns with an overview of political, economic and technological factors that are changing these industries and their markets.  
GE credit: SocSci, Div.—II. (II.) Rucker

(change in existing course—eff. winter 05)

# Transportation Technology and Policy

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## **New and changed courses in Transportation Technology and Policy (TTP)**

### **Graduate Division Courses**

#### **281. ITS Transportation Seminar Series (1)**

Seminar—1.5 hours. Transportation seminars by guest speakers, on varied topics. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.) Mokhtarian, Sperling

(new course—eff. spring 06)

#### **283. Professionalism, Leadership, and Ethics (1)**

Seminar—2 hours. Speakers from industry, government, academia, and NGOs will lead discussions about succeeding and performing in the professional world. They will address leadership, ethics, and other workplace issues. May be repeated for credit. (S/U grading only.)—III. (III.) Sperling

(new course—eff. spring 06)

# University Writing Program

## New Program in the College of Letters and Science

(College of Letters & Science)

\_\_\_\_\_, Director

Department Office, 171 Voorhies Hall; (530) 752-6283

<http://writingprogram.ucdavis.edu>

### Committee in Charge

John Boe, Ph.D. (University Writing Program)

Elizabeth Davis, Ph.D. (University Writing Program)

Gail Finney, Ph.D. (Comparative Literature, German)

Ines Hernandez-Avila, Ph.D. (Native American Studies)

Jay Mechling, Ph.D. (American Studies)

Sandra M. Murphy, Ph.D. (Education)

David A. Robertson, Ph.D. (English)

John Samsel, M.A. (Linguistics)

Evan Watkins, Ph.D. (English)

### Affiliated Faculty

Cynthia J. Bates, M.A., Lecturer

Mary E. Bly, M.A., Lecturer

John Boe, Ph.D., Lecturer, Academic Federation Excellence in Teaching Award

Marlene B. Clarke, Ph.D., Lecturer

Mardena E. Creek-Michelson, Ph.D., Lecturer

Elizabeth Davis, Ph.D., Lecturer

Pamela Demory, Ph.D., Lecturer

Aliki Dragona, Ph.D., Lecturer

Dale B. Flynn, Ph.D., Lecturer

Laurie Glover, Ph.D., Lecturer

Gary S. Goodman, Ph.D., Lecturer

Jared Haynes, M.A., Lecturer, Academic Federation Excellence in Teaching Award

Donald B. Johns, Ph.D., Lecturer, Academic Federation Excellence in Teaching Award

Andy Jones, Ph.D., Lecturer

Pamela J. Major, Ph.D., Lecturer

James McElroy, Ph.D., Lecturer

Nancy V. Morrow, Ph.D., Lecturer

Janet L. Papale, M.A., Lecturer, Academic Federation Excellence in Teaching Award

Raquel Scherr, Ph.D., Lecturer, Academic Federation Excellence in Teaching Award

Eric J. Schroeder, Ph.D., Lecturer, Academic Federation Excellence in Teaching Award

John Stenzel, Ph.D., Lecturer, Academic Federation Excellence in Teaching Award

Jayne L. Walker, Ph.D., Lecturer

## University Writing Program

The University Writing Program (UWP) offers writing courses and seeks to improve writing instruction across campus, through a variety of programs. The UWP coordinates first year, intermediate, and advanced writing courses that satisfy college composition requirements and offers courses in writing across the curriculum, writing in specific disciplines, and writing in the professions. The UWP also administers the English Composition Examination, an alternative way to satisfy the advanced writing requirement. The UWP publishes an annual anthology of exemplary student writing, *Prized Writing*, and a journal for writing instructors, *Writing on the Edge*. The Writing in the Disciplines Workshop Program presents workshops on teaching writing for faculty and TAs and workshops on writing for students. The Writing Ambassadors Program trains advanced undergraduates and places them as interns in K-12 classrooms, to improve writing instruction.

## New and changed courses in University Writing Program (UWP)

### Lower Division Courses

#### 1. Expository Writing (4)

Lecture/discussion—4 hours. Prerequisite: completion of Subject A requirement. Composition, the essay, paragraph structure, diction, and related topics. Frequent writing assignments will be made. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 1.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

#### 18. Style in the Essay (4)

Lecture/discussion—4 hours. Prerequisite: course 1 or English 3 or the equivalent. Style, language, and structure in the essay. Instruction in analyzing style, developing a written voice, revising sentences, developing effective paragraphs and arguments, and writing with force and clarity. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 18.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

#### 19. Writing Research Papers (4)

Lecture/discussion—4 hours. Prerequisite: course 1 or English 3 or the equivalent. Development of skills in critical reading, analysis, documentation, and writing needed for research-based assignments. Instruction provided in formulating research topics and in developing effective arguments. Reading and writing assignments may focus on a single theme. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 19.—I, II. (I, II.)

(new course—eff. fall 05)

#### 92. Internship in Writing (1-12)

Internship—3-36 hours. Prerequisite: course 1 or English 3. Internships in fields where students can practice their skills. May be repeated for credit for a total of 12 units. Not open to credit to students who have completed English 92. (P/NP grading only.)

(new course—eff. fall 05)

#### 98. Directed Group Study (1-5)

Prerequisite: course 1 or English 3. Not open to credit to students who have completed English 98. (P/NP grading only.)

(new course—eff. fall 05)

#### 99. Special Study for Undergraduates (1-5)

Not open to credit to students who have completed English 99. (P/NP grading only.)

(new course—eff. fall 05)

### Upper Division Courses

#### 101. Advanced Composition (4)

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent and upper division standing. Instruction for students in all disciplines in advanced principles of expository writing. Focus on writing tasks both within and beyond the academy. Assignments provide practice in a variety of modes of writing: narrative, analysis, explanation, argument, critique. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 101.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**102A. Writing in the Disciplines (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent; concurrent enrollment in a specified course in a subject-matter discipline, acceptance into a specified major, or consent of instructor. Advanced instruction in the elements of expository writing, with special emphasis on their application to writing projects in a specified academic discipline. May be repeated one time for credit if taken in conjunction with a different subject-matter course. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102A.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**102B. Writing in the Disciplines: Biological Sciences (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to majors in a biological science or to students concurrently enrolled in an upper division biological science course. Advanced instruction in writing in the discipline of biology. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102B.—I, II, III.

(new course—eff. fall 05)

**102C. Writing in History (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to majors in history or to students concurrently enrolled in an upper division course accepted for the major. Advanced instruction in writing in the discipline of history. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102C.—II, III. (II, III.)

(new course—eff. fall 05)

**102D. Writing in International Relations (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to majors in international relations or to students concurrently enrolled in an upper division course accepted for the major. Advanced instruction in writing in the discipline of international relations. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102D.—III. (III.)

(new course—eff. fall 05)

**102E. Writing in Engineering (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to upper division students in the College of Engineering and to student enrolled in an upper division engineering or computer science course. Advanced instruction in writing in the discipline of engineering. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102E.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**102F. Writing in Food Science and Technology (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to majors in food science and technology or to students concurrently enrolled in an upper division course in food science and technology. Advanced instruction in writing in the discipline of food science and technology. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102F.

(new course—eff. fall 05)

**102G. Writing: Bioregion (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, upper division standing. Open to majors in Land, Air and Water Resources, Nature and Culture, Wildlife, Fish, and Conservation Biology or concurrent enrollment in an upper division course that focuses to some extent on the bioregion (e.g., botany, geology, or literature of California). Advanced instruction in writing in those disciplines that focus on the intertwined human and non-human communities of the Putah and Cache Creek watersheds in which the university is located. GE credit:

Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 102G.—III. (III.)

(new course—eff. fall 05)

**104A. Writing in the Professions: Business Reports and Technical Communication (4)**

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent, and upper division standing. Instruction designing, writing, and documenting formal and informal reports directed toward a variety of work-related audiences. Instruction in presenting data graphically. Suitable for students planning careers in science, government, business, engineering, or industry. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104A.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**104B. Writing in the Professions: Law (4)**

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent and upper division standing. Instruction in advanced principles of critical thinking, argumentation, and style, with special emphasis on their application to situations in the legal profession. Suitable for students planning careers in law, business, administration, or management. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104B.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**104C. Writing in the Professions: Journalism (4)**

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent and upper division standing. Advanced instruction in writing non-fiction for magazines and newspapers, including problems of style and language. Special emphasis on conducting research, interviewing, analyzing markets, and writing query letters. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104C.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**104D. Writing in the Professions: Elementary and Secondary Education (4)**

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent and upper division standing. Advanced instruction in a variety of modes of expository writing, concentrating on topics related to teaching and issues in contemporary American education. Strongly recommended for teaching credential candidates. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104D.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**104E. Writing in the Professions: Science (4)**

Lecture/discussion—3 hours. Prerequisite: course 1 or English 3 or the equivalent and upper division or graduate science curriculum. Advanced instruction in writing abstracts, research proposals, scientific papers, other forms of scientific communication and in presenting data graphically. Primarily for students engaged in or planning careers in basic or applied research. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104E.—I, II, III. (I, II, III.) (new course—eff. fall 05)

**104F. Writing in the Health Profession (4)**

Lecture/discussion—3 hours; extensive writing. Prerequisite: course 1 or English 3 or the equivalent, advanced standing. Advanced instruction in several forms of expository writing common in the health professions, focusing on topics related to health, disability, and disease and emphasizing effective communication between the writer and different audiences. Suitable for students planning careers in such health professions as medicine, dentistry, physical therapy, genetic counseling, and optometry. GE credit: Wrt (cannot be used to satisfy a college or university composition requirement and GE writing experience simultaneously). Not open to credit to students who have completed English 104F.—I, II, III. (I, II, III.)

(new course—eff. fall 05)

**192. Internship in Writing (1-12)**

Internship—3-36 hours. Prerequisite: course 1 or English 3. Internships in fields where students can practice their skills. A maximum of 4 units is allowed toward the major in English. May be repeated for credit for a total of 12 units. Not open to credit to students who have completed English 192. (P/NP grading only.)

(new course—eff. fall 05)

**197I. Tutoring in Writing (1-5)**

Tutoring—1-5 hours. Prerequisite: upper division standing and consent of Chairperson. Leading of small voluntary discussion groups affiliated with one of the department's regular courses. Does not fulfill requirement for major. May be repeated for credit for a total of 8 units. Not open to credit to students who have completed English 197I. (P/NP grading only.)

(new course—eff. fall 05)

**197TC. Community Tutoring in Writings (1-4)**

Tutoring—1-4 hours. Prerequisite: upper division standing and a major in English; consent of chairperson. Field experience, with individuals or in classroom in instruction of English language, literature, and composition. Does not fulfill requirement for major. May be repeated for credit. Not open to credit to students who have completed English 197TC. (P/NP grading only.)

(new course—eff. fall 05)

**198. Directed Group Study (1-5)**

Prerequisite: one course from courses 1, English 3, 5F, or 5P. Not open to credit to students who have completed English 198. (P/NP grading only.)

(new course—eff. fall 05)

**199. Special Study for Advanced Undergraduates (1-5)**

Not open to credit to students who have completed English 199. (P/NP grading only.)

(new course—eff. fall 05)

**Graduate Courses****298. Directed Group Study (1-5)**

Not open to credit to students who have completed English 298. (S/U grading only.)

(new course—eff. fall 05)

**299. Individual Study (1-12)**

Not open to credit to students who have completed English 299. (S/U grading only.)

(new course—eff. fall 05)

**Professional Courses****390. Theory and Practice of University-Level Composition Instruction (4)**

Seminar—3 hours; term paper. Prerequisite: graduate standing; appointment as Teaching Assistant in the Composition Program. Examination of current theories about the teaching of writing and their practical application to undergraduate writing courses at UC Davis. Not open to credit to students who have completed English 390. (S/U grading only.)—III. (III.)

(new course—eff. fall 05)

**392. Teaching Expository Writing (2)**

Discussion—2 hours. Prerequisite: graduate standing, appointment as Teaching Assistant in the Composition Program; completion of course 390 or the equivalent. Discussion of problems related to teaching expository writing at the university level, with special emphasis on teaching reading and writing skills and responding to student papers. (S/U grading only.)—I. (I.)

(new course—eff. fall 05)

**396. Teaching Assistant Training Practicum (1-4)**

Prerequisite: graduate standing. May be repeated for credit. Not open to credit to students who have completed English 396. (S/U grading only.)—I, II, III. (I, II, III.)

(new course—eff. fall 05)

## Veterinary Medicine

### New and changed courses in Veterinary Medicine (VMD)

#### Graduate Courses

##### 298. Group Study (1-5)

Prerequisite: consent of instructor. (S/U grading only.)  
(change in existing course—eff. winter 05)

##### 299. Research (1-12)

Prerequisite: consent of instructor. (S/U grading only.)  
(change in existing course—eff. winter 05)

#### Professional Courses

##### 400. Doctoring (1.2)

(cancelled course—eff. fall 05)

##### 400A. Freshman Doctoring (2.5)

Lecture—18 sessions; discussion—2 sessions; workshop—5 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine and consent of instructor. Introduction to the “art” of veterinary medicine, focusing on essential skills such as communication, team-building, leadership, conflict management, stress management and financial management. Emphasis on practical application of these skills to be able to function efficiently and effectively in practice, academia, industry, government or other career. (S/U grading only.)—I. (I.) Klingborg, Timmins  
(change in existing course—eff. fall 05)

##### 400B. Sophomore Doctoring (2.3)

Lecture—13 sessions; discussion—4 sessions; project—1 hour; laboratory—5 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine; consent of instructor. Further the development of new technical skills that will prepare students for life-long learning and successful veterinary practice management. Emphasis will be on hands-on learning through participation. (Deferred grading only, pending completion of sequence. S/U grading only.)—I, II, III. (I, II, III.) Klingborg, Timmins  
(change in existing course—eff. fall 05)

##### 401A. The Normal Anatomy of the Canine Locomotor System (3.4)

Laboratory—18 sessions; lecture—16 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine. Normal canine anatomy of bones, joints, muscles, ligaments, tendons, nerves and vessels of the vertebral column and limbs; musculoskeletal physiology and biomechanics.—I. (I.) Meyers  
(change in existing course—eff. fall 04)

##### 401B. The Normal Anatomy of the Canine Head (1.7)

Laboratory—8 sessions; lecture—7 sessions; discussion—2 sessions. Prerequisite: first-year standing the School of Veterinary Medicine. Normal canine anatomy with comparison to other species of bones, joints, muscles, ligaments, tendons, nerves and vessels of the head including the eye and ear.—II. (II.) Plopper  
(change in existing course—eff. winter 05)

##### 402. Structure and Function of the Cardiovascular and Respiratory Systems (4.5)

Lecture—32 sessions; laboratory—13 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine or consent of instructor. Integrated view of cardiovascular and respiratory anatomy and physiology. (Deferred grading only, pending completion of sequence.)—I, II. (I, II.) Jones  
(change in existing course—eff. fall 05)

##### 403. Physiological Chemistry (5.9)

Lecture—52 sessions; discussion—7 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine and consent of instructor. Biochemical principles used to analyze problems and to evaluate metabolic relationships important in animal health and pathophysiology. Integrative approach, emphasizing controls of major metabolic pathways, molecular basis of gene expression, tumorigenesis and signal transduction.—I. (I.) Cortopassi  
(change in existing course—eff. fall 05)

##### 407L. Principles and Techniques of Surgery and Anesthesia Laboratory (1.4)

Laboratory—14 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. Introduction to surgical anatomy, operative and anesthetic skills. (Deferred grading only, pending completion of sequence. S/U grading only.)—I, II, III. (I, II, III.) Gregory, Ilkiw  
(change in existing course—eff. fall 04)

##### 412. Fundamentals of Zoonoses (1.1)

Lecture—11 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine or consent of instructor. Major zoonotic infections transmitted mainly by domestic animals, especially pets and particularly in North America. A short review of symptoms in animals and humans, epidemiology, diagnostic tests, treatment and prevention will be presented for each animal species and each infection or infestation. Some zoonotic diseases, subject to USDA rules and regulations, will be studied in more detail (i.e., rabies, brucellosis, tuberculosis, avian chlamydiosis).—III. (III.) Chomel  
(change in existing course—eff. spring 05)

##### 413. Veterinary Food Safety (1.3)

Lecture—13 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine; consent of instructor. The food system and diseases transmitted by food. Topics include sources of contaminants, the function of processing in food safety, and the role of veterinarians in pre-harvest food safety and in food protection in general.—III. (III.) Cliver  
(change in existing course—eff. spring 06)

##### 414A. Principles of Veterinary Pharmacology and Toxicology (2.5)

Lecture—20 sessions; discussion—4 sessions; laboratory—1 session. Prerequisite: second-year standing in the School of Veterinary Medicine. Introduction to the principles of pharmacology and toxicology. Pharmacology/toxicokinetics, pharmacology/toxicodynamics and chemotherapy of bacterial, neoplastic, fungal and viral diseases.—I. (I.) Buckpitt  
(change in existing course—eff. fall 04)

##### 414C. Veterinary Toxicology (1.9)

Lecture—16 sessions; discussion—2 sessions; laboratory—1 session. Prerequisite: second-year standing in the School of Veterinary Medicine. Toxicants of major importance in veterinary medicine. Basic principles and mechanism of action of toxicants.—III. (III.) Pessah  
(change in existing course—eff. spring 05)

##### 415. Clinical Skills (1.0)

(cancelled course—eff. fall 05)

**415A. Freshman Clinical Skills (1.1)**

Lecture—1 session; lab—10 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine and consent of instructor. Development of clinical skills by learning procedures that are important to the practice of veterinary medicine in a variety of species in both a laboratory and clinical environment. (Deferred grading only, pending completion of sequence. *S/U* grading only.)—I, II, III. (I, II, III.) Nelson

(new course—eff. fall 05)

**415B. Sophomore Clinical Skills (1.2)**

Lecture—1 session; lab—11 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine and consent of instructor. Development of clinical skills by learning procedures that are important to the practice of veterinary medicine in a variety of species in both a laboratory and clinical environment. (Deferred grading only, pending completion of sequence. *S/U* grading only.)—I, II, III. (I, II, III.) Nelson

(change in existing course—eff. fall 05)

**415C. Junior Clinical Skills (1.9)**

Lecture—1 session; lab—18 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and consent of instructor. Development of clinical skills by learning procedures that are important to the practice of veterinary medicine in a variety of species in both a laboratory and clinical environment. (Deferred grading only, pending completion of sequence. *S/U* grading only.)—I, II, III. (I, II, III.) Nelson

(new course—eff. fall 06)

**421. Principles of Neurosciences (2.7)**

Lecture—22 sessions; laboratory—5 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine. An integrated study of normal neurobiology, neuroanatomy and neurophysiology, to enable students to engage in studies of neurologic disorders and clinical neurology.—II. (II.) Gietzen

(change in existing course—eff. winter 05)

**430. Principles of Radiography and Radiologic Interpretation (3.6)**

Lecture—24 sessions; laboratory—2 sessions; discussion—10 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine and consent of instructor. Physical principles of x-ray production and x-ray matter interactions as they pertain to diagnostic medical imaging and radiation safety. Principles of radiologic interpretation. Principles of ultrasound physics and interpretation. (Deferred grading only, pending completion of sequence.)—I, II, III. (I, II, III.) Wisner

(change in existing course—eff. fall 05)

**432. Structure and Function of the Gastrointestinal and Mammary Systems (3.2)**

Lecture—22 sessions; laboratory—10 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine. Basic understanding and correlation of the structure and function of the gastrointestinal and mammary systems. Multiple species' differences examined.—II. (II.) Bruss

(change in existing course—eff. winter 05)

**433. Veterinary Oncology (1.2)**

Lecture—12 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine. Relationships between pathology, hematology, cytology, immunology, and the clinical manifestations of neoplastic diseases in animals.—I. (I.) Kent

(change in existing course—eff. fall 05)

**436. Veterinary Ethics and Law (1.2)**

Discussion—12 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine. Ethical and legal issues critical to successful and ethical veterinary practice. Processes through which ethical and legal questions are approached and resolved. Background reading materials and discussions are supplemented with problem-based learning.—I. (I.) Tannenbaum

(new course—eff. fall 04)

**437. Veterinary Ethics and Law (2)**

Lecture—16 sessions; discussion—4 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine or consent of instructor. Ethical and legal issues critical to successful and ethical veterinary practice. Processes through which ethical and legal questions are approached and resolved. Reading and discussions supplemented with problem-based learning.—III. (III.) Tannenbaum

(new course—eff. spring 05)

**437A. Veterinary Ethics and Law (1.2)**

(cancelled course—eff. fall 04)

**437C. Veterinary Ethics and Law (2)**

(cancelled course—eff. spring 05)

**438. Animal Handling (1)**

(cancelled course—eff. spring 04)

**440. Veterinary Neurology (2.7)**

Lecture—21 sessions; laboratory—6 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. Integrated study of the relationship between microanatomy, neurophysiology, neuropathology, and the clinical manifestations and diagnosis of neurological diseases, and the use of the various neurodiagnostic aids.—I. (I.) LeCouteur

(change in existing course—eff. fall 04)

**447. Introduction to Public Veterinary Practice and Foreign Animal Diseases (1.0)**

Lecture—10 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine and consent of instructor. Overview of the importance of foreign animal diseases and the veterinary responsibilities associated with the prevention, detection and reporting of these diseases in the United States.—I (I.). Hullinger

(new course—eff. fall 05)

**460. Fundamentals of Clinical Orthopedics (1.0)**

Lecture—10 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and consent of instructor. Fundamental concepts of veterinary orthopedics, including differentials of bone disease, diagnostics for bone disease, bone biomechanics, principles of fracture repair, applied joint anatomy, principles of joint disease, applied tendon and ligament anatomy, and principles of tendon and ligament disease.—I. (I.) MacDonald

(change in existing course—eff. fall 05)

**470. Hospital Practices (3.4)**

(cancelled course—eff. fall 04)

**480. Senior Clinic (15)**

Clinical activity—60 hours. Prerequisite: fourth-year standing in School of Veterinary Medicine. Integration of knowledge and development of clinical judgement and skills in the diagnosis, treatment, and prevention of animal disease. (Deferred grading only, pending completion of sequence. *S/U* grading only.)—I, II, III. (I, II, III.) Smith

(new course—eff. summer 04)

**490A. Freshman Hospital Practices (2)**

(cancelled course—eff. fall 04)

**490B. Sophomore Hospital Practices (2.0)**

(cancelled course—eff. fall 05)

## Veterinary Medicine: Anatomy, Physiology and Cell Biology

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### New and changed courses in Veterinary Medicine: Anatomy, Physiology and Cell Biology (APC)

#### Upper Division Courses

##### 192. Internship (1-15)

Internship—3-45 hours. Prerequisite: upper division standing, approval of internship. Internship experience off and on campus in all subject areas offered in the Department of Anatomy, Physiology and Cell Biology. Internships are supervised by a member of the faculty. May be repeated for credit if topic differs. (P/NP grading only.)

(new course—eff. spring 04)

#### Graduate Courses

##### 284. Ruminant Nutrition and Physiology (3.0)

Lecture—27 sessions; laboratory—3 sessions. Prerequisite: graduate or first-year standing in School of Veterinary Medicine. Basic and applied aspects of ruminant nutrition and physiology, nutritional and metabolic disorders of ruminants.—III. (III.) Bruss

(change in existing course—eff. spring 05)

##### 285. Morphometry of Cells, Tissues and Organs (2)

Lecture—1 hour; laboratory—3 hours. Prerequisite: course 100 or the equivalent; Statistics 13. Stereological estimation of volumes, surfaces and lengths of organs/components; estimation of number of cells in an organ or tissue, their volumes, products and gene expression. Practical application of stereology and avoidance of most common biases of histological measurements. Offered in alternate years.—(II.) Hyde

(change in existing course—eff. winter 05)

##### 286. Basics of Microscopy and Cellular Imaging (2)

Lab—2 hours; lecture—1 hour. Prerequisite: graduate standing; consent of instructor. 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. Restricted enrollment. Offered in alternate years.—III. Van Winkle

(change in existing course—eff. spring 05)

#### Professional Courses

##### 458. Behavior Theory in Companion Animals (2)

Lecture—20 sessions. Prerequisite: second- or third-year standing in the School of Veterinary Medicine. Clinical application of behavior modification procedures, management and drug therapy to resolve common behavioral problems of companion animals including dogs, cats, horses and birds.—III. (III.) Hart, Bain

(change in existing course—eff. spring 05)

##### 484. Ruminant Nutrition and Physiology (3.0)

(cancelled course—eff. spring 05)



## Veterinary Medicine: Medicine and Epidemiology

### New and changed courses in Veterinary Medicine: Medicine and Epidemiology (VME)

#### Graduate Courses

#### 217. Evaluation and Application of Diagnostic Tests (2.0)

Lecture/discussion—17 sessions; laboratory—3 sessions. Prerequisite: consent of instructor; introductory courses in probability (e.g., Preventive Veterinary Medicine 402 or Statistics 102) and epidemiology (e.g., Preventive Veterinary Medicine 405 or Epidemiology 205); a working knowledge of immunological principles beneficial but not essential to understanding technical material associated with diagnostic tests. Topics include sensitivity, specificity, predictive values, Bayes' Theorem, ROC analysis, measuring agreement between tests, series and parallel testing strategies. Emphasis on rational evaluation, interpretation and presentation of test results for individuals and aggregates. Offered in alternate years.—III. Gardner

(change in existing course—eff. spring 06)

#### 294B. Conservation Biology and Veterinary Medicine (1)

Seminar—10 sessions. Prerequisite: first-, second- or third-year standing in the School of Veterinary Medicine or graduate student standing. Current topics in conservation biology as they relate to veterinary medicine, wildlife population management and ecosystem health. May be repeated two times for credit if topic differs. (S/U grading only.)—II. (II.) Mazet

(change in existing course—eff. winter 05)

#### Professional Courses

#### 413. Medical Primatology (2.0)

Lecture—20 sessions. Prerequisite: second- and third-year standing in School of Veterinary Medicine; consent of instructor. Major diseases, medical management and husbandry of captive non-human primates. Offered in alternate years. (S/U grading only.)—III. Lerche

(change in existing course—eff. spring 06)

#### 415. Management and Diseases of Captive Wildlife (2.0)

Lecture—20 sessions. Prerequisite: second- or third-year standing in the School of Veterinary Medicine or consent of instructor. Introduction to the roles of a zoological veterinarian and the most common topics encountered. Emphasis on taxonomy, husbandry, preventive medicine and the most common diseases seen in common captive wildlife species.—I. (I.) Wack

(change in existing course—eff. fall 05)

#### 416. Diseases of Fish (2.1)

Lecture—18 sessions; laboratory—3 sessions. Prerequisite: second- or third-year standing in the School of Veterinary Medicine or consent of instructor. Etiology, pathology, diagnosis, treatment and prevention of diseases of fish. Preventive management of diseases in aquaculture and aquaria. Offered in alternate years.—III. Hedrick

(change in existing course—eff. spring 07)

#### 417. Companion Avian Medicine (2.0)

Lecture—20 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine or consent of instructor. Diseases, diagnostics, medical management and surgery of psittacine species. Avian nutrition, husbandry, and management.—II (II.). Tell

(change in existing course—eff. winter 06)

#### 419. Companion Exotic Small Animal Medicine and Surgery (3.4)

Lecture—34 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine or consent of instructor. The etiology, clinical presentation, diagnostic evaluation, treatment, prevention, and control of medical diseases of companion small exotic mammals, amphibians and reptiles.—I. (I.) Hawkins

(change in existing course—eff. fall 05)

#### 426. Foreign Animal Diseases of Livestock, Poultry, and Horses (2.0)

(cancelled course—eff. winter 06)

#### 428. Food Animal Surgery (1.6)

Lecture—16 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and consent of instructor. Selected topics in surgical diseases of food animals.—III. (III.) Smith

(change in existing course—eff. spring 05)

#### 430. Raptor Medicine and Rehabilitation (2)

Lecture—20 sessions. Prerequisite: first-, second- or third-year standing in the School of Veterinary Medicine. Biology, behavior, parasites, diseases, toxins, iatrogenic conditions, diagnostics, treatments, nursing, housing, nutrition, rehabilitation and release techniques for eggs, orphans and adult native California raptors., III. (III.) Tell

(change in existing course—eff. spring 06)

#### 450. Small Animal Clinical Immunology (1.7)

Lecture—17 sessions. Prerequisite: second- or third-year standing in the School of Veterinary Medicine; consent of instructor. Review of the basic mechanisms of immunologic diseases in small companion animals and a description of common immunologic diseases organized by body system, including clinical presentation, diagnosis and treatment.—III. (III.) Sykes

(change in existing course—eff. spring 06)

#### 455. Beginning Veterinary Spanish (2)

Lecture/discussion—3 hours. Prerequisite: first-, second-, third-year or MPVM standing in the School of Veterinary Medicine. Preparation to converse with clients (e.g. companion animal owners) and livestock managers in Spanish in clinical settings. (S/U grading only.)—II. (II.) Hird

(change in existing course—eff. winter 05)

#### 456. Intermediate Veterinary Spanish (1)

Discussion—10 sessions. Prerequisite: first-, second-, third-year or MPVM standing in the School of Veterinary Medicine. May be repeated two times for credit. Presentations on veterinary-related topics in Spanish by native speakers and others and discussion to prepare students to converse with clients (e.g., companion animal owners and livestock managers) in Spanish. (S/U grading only.)—III. (III.) Hird

(change in existing course—eff. spring 05)

#### 461A. Small Animal Medicine - Level I (3.6)

Lecture—32 sessions; lab—4 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine; consent of instructor. Fundamental principles, clinical manifestations, diagnostic methods and therapeutic approaches to the medical diseases of dogs and cats. Course is a core option for the professional veterinary curriculum and preparatory for advanced courses in small medical diagnoses and therapeutics.—III. (III.) Johnson

(change in existing course—eff. spring 05)

**461B. Small Animal Medicine—Level I (3.3)**

Lecture—33 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and completion of course 461A, if Small Animal Medicine is your core or consent of instructor. Continuation of fundamental principles, clinical manifestations, diagnostic methods, and therapeutic approaches to the medical diseases of dogs and cats.—I. (I.) Marks

(change in existing course—eff. fall 05)

**461C. Small Animal Medicine—Level I (3.7)**

Lecture—37 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine, course 461A, 461B (Small Animal Medicine core only), or consent of instructor. Continuation of fundamental principles, clinical manifestations, diagnostic methods and therapeutic approaches to the medical diseases of dogs and cats.—II. (II.) White

(change in existing course—eff. winter 06)

**463A. Food Animal Medicine, Level I (3.6)**

Lecture—36 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine. Fundamentals of food animal medicine presented in a lecture format with integrated case discussion to illustrate the context and application of material presented and to promote development of problem-solving skills.—III. (III.) Smith

(change in existing course—eff. spring 05)

**463B. Food Animal Medicine, Level I (3.4)**

Lecture—34 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and completion of course 463A, if Food Animal Medicine is your core; consent of instructor. Fundamentals of food animal medicine with integrated case discussions to illustrate the context and application of material presented and to promote development of problem-solving skills.—I. (I.) George

(change in existing course—eff. fall 05)

**463C. Food Animal Medicine, Level I (3.3)**

Lecture—31 sessions; laboratory—2 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine (and courses 463A, B if Food Animal Medicine is fulfilling your core requirement). Continuation of the fundamentals of food animal medicine with integrated case discussions to illustrate the context and application of material presented and to promote development of problem-solving skills., II. (II.) George

(change in existing course—eff. winter 05)

**464B. Equine Medicine, Level I (3.7)**

Lecture—35 sessions; discussion—2 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and completion of course 464A (Equine Medicine core), or consent of instructor. Continuation in instruction in the etiology, pathophysiology, epidemiology, clinical presentation, diagnostic evaluation, treatment, prevention, and control of important infectious and noninfectious diseases of horses. A problem-based approach to differential diagnosis is emphasized.—I. (I.) Spier

(change in existing course—eff. fall 05)

**464C. Equine Medicine, Level I (3.4)**

Lecture—33 sessions; discussion, 1 session. Prerequisite: third-year standing in the School of Veterinary Medicine (and courses 464A, B if Equine Medicine is fulfilling your core requirement). Continuation in instruction in the etiology, pathophysiology, epidemiology, clinical presentation, diagnostic evaluation, treatment, prevention and control of important infectious and non-infectious diseases of horses. A problem-based approach to differential diagnosis emphasized., II. (II.) Pusterla

(change in existing course—eff. winter 05)

**465. Advanced Equine Medicine, Level II (3.6)**

Lecture—36 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine; courses 464A, 464B, and 464C; consent of instructor. An approach to commonly encountered problems of horses held as individuals and farm settings. Development of problem-solving skills related to the medical management of horses and their problems.—III. (III.) Watson

(change in existing course—eff. spring 06)

**465L. Advanced Equine Medicine Level II Laboratory (0.8)**

Laboratory—8 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and course 464A,B,C. Clinical presentation and instruction in treatment of the medical aspects of equine practice. (S/U grading only.), III. (III.) Watson

(change in existing course—eff. spring 05)

**468. Advanced Feline Medicine (2)**

Lecture—20 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine; consent of instructor. Fundamental principles, clinical manifestations, diagnostic methods, and therapeutic approaches to medical diseases of cats. Diseases unique to cats and diseases whose clinical presentations and diagnostic evaluations are fundamentally different in cats versus dogs.—III. (III.) Westropp

(change in existing course—eff. spring 05)

**486. Equine Clinical Neonatology (1)**

Discussion—10 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine. Discussion of methods of equine neonatal intensive care and disease pathophysiology in a case format. (S/U grading only.)—III. (III.) Magdesian

(change in existing course—eff. spring 05)

**487. Comparative Bio-Medical: Form and Function (2)**

Lecture—20 sessions. Prerequisite: first-, second- or third-year standing in the School of Veterinary Medicine. Comparative biology approach and concepts for non-traditional animal species; alternative pets, zoos, rehabilitation centers, wildlife, aquaculture, laboratory animals, and non-human primates. (S/U grading only.), II. (II.) Larsen

(change in existing course—eff. winter 05)

## Veterinary Medicine: Molecular Biosciences

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### **New and changed courses in Veterinary Medicine: Molecular Biosciences (VMB)**

#### **Graduate Courses**

##### **254. Toxicology of the Respiratory System (3)**

Lecture—3 hours; discussion. Prerequisite: Pharmacology and Toxicology 201, 202, 203, or consent of instructor. Survey of structure and function of the respiratory system, the pathophysiology of major lung diseases, the interactions of toxicants with the lung and response of this organ to injury. Offered in alternate years.—II. Buckpitt

(change in existing course—eff. winter 06)

##### **298. Group Study (1-5)**

(S/U grading only.) I, II, III, IV

(change in existing course—eff. winter 05)

#### **Professional Courses**

##### **418. Veterinary Complementary Medicine (1.1)**

Lecture—10 sessions; laboratory—1 session. Prerequisite: first-, second-, or third-year standing in the School of Veterinary Medicine. Introduction to complementary (alternative) medicine and how it is applied for the treatment of diseases. Acupuncture, chiropractic, herbal medicine, and traditional Chinese medicine. Acupuncture technique in both equine and small animals. (S/U grading only.)—I. (I.) Mount

(change in existing course—eff. fall 04)

## Veterinary Medicine: Pathology, Microbiology, and Immunology

### New and changed courses in Veterinary Medicine: Pathology, Microbiology, and Immunology (PMI)

#### Upper Division Courses

##### 126L. Immunology Laboratory (2)

Laboratory—6 hours. Prerequisite: course 126 or the equivalent (may be taken concurrently). Laboratory procedures in clinical immunology. Laboratory animal immunization/bleeding. Quantitative and qualitative characterization of the immune response. Cells of the immune system.—II. (II.) Stott

(change in existing course—eff. fall 04)

##### 128. Biology of Animal Viruses (3)

Lecture—3 hours. Prerequisite: Biological Sciences 102. Fundamental physical and chemical properties of animal viruses; methods of propagation, purification and assay. Mechanisms of viral replication and pathogenesis of viral infections in man and animals. Immunity to virus diseases and oncogenic properties of animal viruses. Two units of credit to students who have completed Microbiology 162.—I. (I.) Miller

(change in existing course—eff. fall 04)

#### Graduate Courses

##### 270. Advanced Immunology (3.0)

Lecture—3 hours. Prerequisite: introductory course in immunology. Current concepts in lymphocyte biology, ontogeny, cooperation, functional attributes and protective immune response(s), mechanisms of immunologic disease, immunological unresponsiveness and host-evasion mechanisms of viral, bacterial, and parasitic pathogens. Strategies in immunomodulation and immunotherapy. Advanced methodologies in immunologic research. Offered in alternate years.—III. Stott

(change in existing course—eff. spring 05)

##### 275. Comparative Pathology of Organ Systems (4)

Lecture—3 hours; laboratory/discussion—2 hours. Prerequisite: graduate level standing and consent of instructor. Correlative alterations in structure and function of organ response to injury presented in context of major disease syndromes. Emphasis on general responses to disease in both humans and animals. Introductory material on the mechanisms of viral, bacterial and parasite pathogenesis.—I. (I.) Wilson

(change in existing course—eff. fall 04)

##### 283. Comparative Avian Anatomy and Pathology (1-3)

Lecture—3 hours. Prerequisite: anatomy section (1.0 unit): upper division undergraduate standing, veterinary students, or graduate standing, and consent of instructor. pathology section: third- or fourth-year standing in the School of Veterinary Medicine or graduate standing and consent of instructor. Ten lectures outline gross/microscopic functional anatomy of a wide range of avian species as appropriate for students interested in avian biology. The remaining 20 lectures encompass comparative aspects of avian pathobiology and disease manifestations for students interested in avian diseases.—I. (I.) Lowenstine

(change in existing course—eff. winter 05)

##### 287. Comparative Pathology of Laboratory Animals (3)

Lecture—3 hours. Prerequisite: general and systemic pathology; second-, third-, or fourth-year standing in the School of Veterinary Medicine or graduate student standing, or consent of instructor. Recognition of lesions and understanding of pathogenesis of diseases of animals commonly kept in laboratory settings. Species covered include rodents, lagomorphs, amphibians, nonhuman primates, genetically manipulated animals and novel animal models. Offered in alternate years.—(III.) Lowenstine

(change in existing course—eff. spring 04)

##### 290. Seminar (1)

Seminar—1 hour. Prerequisite: graduate level standing. Topics in pathology, microbiology or immunology. May be repeated for credit. (S/U grading only.), I, II, III, IV. (I, II, III, IV.)

(change in existing course—eff. winter 05)

##### 291A. Seminar in Immunology (1)

Seminar—1 hour. Prerequisite: course 126 or the equivalent. Students choose topic for each quarter. Individual or pairs of students choose a paper for all to read and present a seminar based on the subject of the paper. All students participate in discussion. May be repeated for credit. (S/U grading only.)—I, III. (I, III.) Gershwin

(change in existing course—eff. fall 04)

##### 291B. Histopathology Conference (1.0)

(cancelled course—eff. summer 05)

##### 292B. Surgical Pathology Conference (1)

Discussion—1 hour. Prerequisite: graduate student standing or consent of instructor. Diagnosis and discussion of current surgical pathology cases based on clinical records and microscopic study. May be repeated for credit. (S/U grading only.), I, II, III, IV. (I, II, III, IV.) Munson

(change in existing course—eff. winter 05)

##### 293A. Seminar in Infectious Diseases (1)

Seminar—1 hour. Prerequisite: current enrollment in health science professional school or graduate standing in biological sciences. Discussion of current topics and cases of infectious diseases. May be repeated one time for credit if topic differs. (S/U grading only.)—I, II, III. (I, II, III.) Byrne

##### 293B. Necropsy and Surgical Pathology (2-4)

Laboratory—6-12 hours. Prerequisite: graduate student standing and consent of instructor. Responsible diagnostic casework. Performance of necropsies, slide reading, and case reporting. May be repeated for credit. (S/U grading only.), I, II, III, IV. (I, II, III, IV.) Munson

(change in existing course—eff. winter 05)

##### 296. Microbiological Diagnosis (2-5)

Laboratory—5-14 hours; discussion, 1 hour. Prerequisite: laboratory course in veterinary or medical microbiology or equivalent or consent of Chief of Microbiology, VM Teaching Hospital. Laboratory diagnosis of infectious diseases involving case work at the VM Teaching Hospital. (S/U grading only.), I, II, III. (I, II, III.) Byrne

(change in existing course—eff. winter 05)

##### 298. Group Study (1-5)

Prerequisite: consent of instructor. (S/U grading only.)

(change in existing course—eff. winter 05)

# Veterinary Medicine: Population Health and Reproduction

## New and changed courses in Veterinary Medicine: Population Health and Reproduction (PHR)

### Upper Division Courses

#### 106. Human-Animal Interactions: Benefits and Issues (2)

Lecture—9 sessions; discussion—9 sessions; laboratory—1 session. Prerequisite: upper division standing or consent of instructor. The contributions of animals to human society, including historic, anthropologic, developmental, human health and therapeutic perspectives, as well as effects of humans on animals. One field trip required.—II. (II.) Hart

(change in existing course—eff. winter 05)

#### 111. Food Animals and the Public's Health (3)

Lecture—3 hours. Prerequisite: Biological Sciences 1 or consent of instructor. Causes, prevention, and control of animal diseases important in economic agriculture and in public health, with emphasis upon animal management factors in disease.—II. (II.) Moore, West

(change in existing course—eff. winter 05)

#### 150. Foodborne Infections and Intoxications (4)

Lecture—4 hours. Prerequisite: Food Science and Technology 104 or Pathology, Microbiology, and Immunology 127 or second- or third-year standing in the School of Veterinary Medicine. Prevalence and characteristics of those diseases of humans which are derived from food or food sources; access of disease agents to and distribution in food and food sources; exposure of people to these agents; prevention of foodborne diseases.—III. (III.) Cliver

(change in existing course—eff. spring 05)

### Graduate Courses

#### 212. Epidemiology of the Zoonoses (4.0)

Lecture—35 sessions; discussion—5 sessions. Prerequisite: graduate standing or third-year standing in the School of Veterinary Medicine or consent of instructor. Epidemiological, biological and ecological features of some major infections shared by humans and other animals. Wildlife and domestic animals zoonoses of major health and economic significance are presented to illustrate how knowledge of zoonoses epidemiology is essential for implementing control measures.—II. (II.) Chomel

(change in existing course—eff. winter 05)

#### 214. Vector-Borne Infectious Diseases: Changing Patterns (2)

Lecture/discussion—2 hours. Vector-borne infectious diseases especially as they relate to changing patterns associated with climatic changes, trade and population movement. (Same course as Entomology 214.)—I. (I.) Edman, Chomel

(new course—eff. fall 04)

#### 220. Avian Medicine (3)

Lecture—3 hours. Prerequisite: second-year standing or MPVM standing in the School of Veterinary Medicine or graduate standing or consent of instructor. Instruction on the methods of prevention of the major diseases of domestic poultry.—III. (III.) Wakenell

(change in existing course—eff. spring 05)

#### 225. Preventive Avian Medical Practice (3)

Lecture—3 hours. Prerequisite: first-year, second-year, third-year, or MPVM standing in the School of Veterinary Medicine, or consent of instructor. Discussion of the economic structure of the broiler, commercial egg and turkey industries, and the delivery of preventive veterinary medical services within these industries. Specific prevention and eradication programs pertaining to diseases of economic importance are covered.—III. (III.) West

(change in existing course—eff. spring 05)

#### 232. Advanced Reproductive Biology (3)

Lecture—1.5 hours; discussion—1.5 hours. Prerequisite: neurobiology, physiology and behavior 121 and 130; graduate standing or consent of instructor. Examination of or challenge to established and emerging concepts at the molecular, cellular and organismal levels. Reproductive development, the male, the non-pregnant female and the pregnant or senescent female. Offered in alternate years.—III. Conley

(change in existing course—eff. spring 04)

#### 266. Applied Analytic Epidemiology (3)

Lecture—2 hours; laboratory—2 hours. Prerequisite: Preventive Veterinary Medicine 404 or consent of instructor. Principles and applications in analysis of epidemiologic data. Methods of analyzing stratified and matched data, logistic regression for cohort and case-control studies, Poisson regression, survival-time methods. (Same course as Master of Public Health 266.)—III. (III.) Kass

(new course—eff. spring 04)

### Professional Courses

#### 406. Human-Animal Interactions in Veterinary Science (1)

Lecture—9 sessions; laboratory—1 session. Prerequisite: first-, second-, or third-year standing in the School of Veterinary Medicine. Human relationships with companion animals, and, secondarily, on food, laboratory, and wild animals from the perspectives of veterinarians and their clients' needs. Emphasis on the benefits of companion animals for human mental and physical well-being, the role of animals in the human life cycle, societal traditions in keeping animals, and types of specialized and more typical relationships with animals.—II. (II.) Hart

(change in existing course—eff. winter 05)

#### 420. Zoonoses of Non-Human Primates (2.0)

Lecture—20 sessions. Prerequisite: second- or third-year standing in the School of Veterinary Medicine and consent of instructor. Epidemiological, clinical, and biological features of zoonoses of non-human primates. Emphasis given to major zoonoses which are threatening to human health and their treatment and prevention. Focus also on management of non-human primates in research, zoological gardens and in the wild. Offered in alternate years.—II. Chomel

(change in existing course—eff. winter 06)

#### 430. Issues in Animal Production and Resource Utilization (2)

(cancelled course—eff. fall 04)

#### 432. Reproductive Technology in Mammals and Birds (0.8)

Lecture—5 sessions; discussion—3 sessions. Prerequisite: first-year standing in the School of Veterinary Medicine or consent of instructor. Introductory course in the application of technology to the reproductive process in mammals and birds. Emphasis on domestic animals, but birds and non-domestic mammals also discussed. Exposure of students to some of the "sexier" aspects of population/reproduction management. (S/U grading only.)—III. (III.) BonDurant

(change in existing course—eff. spring 04)

#### 432L. Reproductive Technology in Mammals and Birds, Laboratory (0.2)

Laboratory—2 sessions. Prerequisite: course 432 concurrently, first-year standing in the School of Veterinary Medicine. Laboratory demonstrations and exercises in gamete freezing, thawing, and handling; artificial insemination of cattle; artificial insemination and other applications of reproductive technology in small ruminants. (S/U grading only.)—III. (III.) BonDurant

(change in existing course—eff. spring 05)

**439. Beef Cattle Nutrition (1.0)**

(cancelled course—eff. spring 06)

**442. Equine Theriogenology (2.0)**

Lecture—20 sessions. Prerequisite: third-year standing in School of Veterinary Medicine; consent of instructor. Discussions of abnormal conditions and physiologic function in equine reproduction with emphasis on methods of diagnosis and interpretation of clinical and laboratory findings associated with the abnormalities.—I. (I.) Ball

(change in existing course—eff. fall 05)

**442L. Equine Theriogenology Laboratory (1.0)**

Laboratory—10 sessions. Prerequisite: third-year standing in School of Veterinary Medicine; consent of instructor. Hands-on diagnosis and implementation of techniques related to reproductive examination of horses. Routine and current procedures performed on the farm. Designed to maximize the opportunity for assessment of the normal reproductive anatomy, the diagnosis and interpretations of physiologic conditions and for becoming comfortable in performing the various routine procedures. I. (I.) Ball

(change in existing course—eff. fall 05)

**446C. Non-Domestic Reproduction (1)**

Lecture—10 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. Follows course 446A. Information relating to reproduction in non-domestic mammals, birds, and reptile species. Concepts relating to the evaluation of reproductive status, diagnosis of infertility, assisted reproduction and contraception will be pre-sented.—III. (III.) Lasley

(change in existing course—eff. spring 05)

**483. Pet Loss Support Hotline and End of Life Issues (2)**

Discussion/laboratory—3-6 hours. Prerequisite: first-, second-, or third-year standing the School of Veterinary Medicine. Training and experience in addressing end-of-life issues for companion animals, including hospice, decision-making and pet loss support. Responding to pet loss hotline callers who are anticipating or experiencing the end of a relationship with a beloved companion animal. Communication skills, especially supportive listening, and referral to community resources. (S/U grading only.)—I, II, III. (I, II, III.) Hart

(change in existing course—eff. spring 04)

**489. Personal, Financial and Professional Development (1.0)**

(cancelled course—eff. winter 06)

## Veterinary Medicine: Preventive Veterinary Medicine

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### New and changed courses in Veterinary Medicine: Preventive Veterinary Medicine (MPM)

#### Professional Courses

##### 402. Medical Statistics I (4)

Lecture—3 hours; laboratory—2 hours. Prerequisite: enrollment in the MPVM program in the School of Veterinary Medicine or consent of instructor. Statistics in clinical, laboratory and population medicine: graphical and tabular presentation of data; probability; binomial; Poisson, normal, t-, F-, and Chi-square distributions; elementary nonparametric methods; simple linear regression and correlation; life tables. Microcomputer applications of statistical procedures in population medicine.—Farver

(change in existing course—eff. fall 04)

##### 403. Medical Statistics II (4)

Lecture—3 hours; laboratory—2 hours. Prerequisite: course 402 or equivalent. Continuation of course 402. Analysis of variance in biomedical sciences; nonparametric methods; multiple regression; biomedical applications of statistical methods. Microcomputer applications to reinforce principles that are taught in lecture.—I. (I.) Farver

(change in existing course—eff. fall 04)

##### 408A. Veterinary Research: Planning and Reporting (2.0)

Lecture—20 sessions. Prerequisite: Master's of Preventive Veterinary Medicine (MPVM) standing in the School of Veterinary Medicine, course 402 or Statistics 102 (with a grade of B- or better), course 405 and 412, or equivalent courses (may be taken concurrently), and ability to use commercial software in statistical and graphical applications, or consent of instructor. Planning, critical analysis, ethics, and written and oral communication of veterinary research.—I. (I.) Mazet

(change in existing course—eff. fall 05)

##### 408B. Veterinary Research: Planning and Reporting (1.0)

Lecture—10 sessions. Prerequisite: consent of instructor; course 408A. Planning, critical analysis, ethics, and written and oral communication of veterinary research.—I. (I.) Mazet

(change in existing course—eff. fall 05)

##### 412. Introduction to Information Management (3.0)

Lecture—10 sessions; laboratory—20 sessions. Prerequisite: consent of instructor; Master's of Preventive Veterinary Medicine (MPVM) students; intermediate computer skills using word processing, spreadsheet, and presentation software. Emphasis on data quality and design of data applications. Introduction to information management. Emphasis on data quality and design of data applications. Specific topics include library fundamentals and managing human resources for project management, data collection, organization, storage, analysis and communication. Limited enrollment.—IV. (IV.) Sischo

(change in existing course—eff. summer session II 05)

## Veterinary Medicine: Surgical and Radiological Sciences

### New and changed courses in Veterinary Medicine: Surgical and Radiological Sciences (VSR)

#### Lower Division Courses

##### 99. Special Study for Undergraduates (1-5)

(P/NP grading only.)

(change in existing course—eff. fall 05)

#### Upper Division Courses

##### 199. Special Study for Advanced Undergraduates (1-5)

(P/NP grading only.)

(change in existing course—eff. fall 05)

#### Graduate Courses

##### 292. Advanced Veterinary Neurology/Neurosurgery (2.0)

(cancelled course—eff. fall 05)

##### 298. Group Study (1-5)

Prerequisite: consent of instructor. (S/U grading only.)

(change in existing course—eff. fall 05)

##### 299. Research (1-12)

Prerequisite: consent of instructor. (S/U grading only.)

(change in existing course—eff. fall 05)

#### Professional Courses

##### 401. Small Animal Radiology Case Discussions (1)

Discussion—10 sessions. Prerequisite: first-, second-, or third-year standing in the School of Veterinary Medicine. The role of diagnostic radiology in the clinical setting and student interpretation of radiographs. May be repeated one time for credit. (S/U grading only.)—I, II, III. (I, II, III.) Wisner

(change in existing course—eff. fall 04)

##### 402. Large Animal Radiology Case Discussions (1)

Discussion—10 sessions. Prerequisite: first-, second-, or third-year standing in the School of Veterinary Medicine. The role of diagnostic radiology in the clinical setting and student interpretation of radiographs. May be repeated one time for credit. (S/U grading only.)—I, II, III. (I, II, III.) Wisner

(change in existing course—eff. fall 04)

##### 404A. Small Animal Radiology (2.9)

Lecture—17 sessions; discussion—12 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine and consent of instructor. Registration in course 404A is required at the beginning of both winter and spring quarters for this two quarter course. Students may audit the course, but retroactive adds after the examination has been administered at the end of each quarter are not allowed. Course 404A is required for students who intend to rotate through the Small Animal Radiology Service during their senior year. Introduction to radiographic interpretation as it relates to musculoskeletal, thoracic, and abdominal disorders of small animals. Assignment of unknown cases as practice in interpreting radiographic patterns described in lecture. (Deferred grading only, pending completion of sequence.)—II, III. (II, III.) Pollard

(change in existing course—eff. winter 06)

##### 404B. Large Animal Radiology (1.6)

Lecture—12 sessions; discussion—4 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine and consent of instructor. Radiographic manifestations of common equine orthopedic, upper airway and thoracic diseases. Common radiographic abnormalities in non-equine large animal patients. Equine and other large animal radiographic pattern recognition and differential diagnosis generation based on the identified pattern.—II. (II.) Puchalski

(change in existing course—eff. winter 06)

##### 405. Advanced Small Animal Abdominal Ultrasound (2.2)

Lecture—12 sessions; discussion—6 sessions; laboratory—4 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. The use of ultrasound for the diagnosis of common clinical diseases in both the abdomen and thorax. Examination techniques of the thorax and the abdomen covered in the laboratory sessions and examples of the abnormal presented in discussion.—II. (II.) Herrgesell

(change in existing course—eff. winter 05)

##### 408. Special Procedure Rounds (2.0)

(cancelled course—eff. fall 05)

##### 410. Current Topics in Radiological Science (1.5)

(cancelled course—eff. fall 05)

##### 413L. Small Animal Dentistry Lab (0.3)

Lab—3 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine; concurrent enrollment in course 413; consent of instructor. Principles of oral examination, oral radiography, routine periodontal treatment and dental extraction techniques. (Deferred grading only, pending completion of sequence. S/U grading only.)—II, III. (II, III.) Verstraete

(new course—eff. winter 06)

##### 415. Lameness in Dogs (1.4)

Lecture—13 sessions; laboratory—1 session. Prerequisite: third-year standing in the School of Veterinary Medicine; consent of instructor. Discussion of lameness examination and detailed descriptions of common congenital and acquired disorders that cause lameness in dogs. Discussion of methods to diagnose and treat.—III. (III.) Kapatkin

(change in existing course—eff. spring 06)

##### 416. Equine Ultrasonology (1)

Lecture—8 sessions; discussion—2 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine and consent of instructor. Familiarize students with ultrasonographic diagnostic methodology and with ultrasonologic features of common diseases of the major equine organ systems.—III. (III.) Whitcomb

(change in existing course—eff. spring 06)

##### 416L. Equine Ultrasonology Lab (.4)

Laboratory—4 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine, concurrent enrollment in course 416, and consent of instructor. Familiarize students with ultrasonographic diagnostic methodology and with ultrasonologic features of common diseases of the major equine organ systems.—III. (III.) Whitcomb

(change in existing course—eff. spring 05)



**423. Diagnostic Ophthalmology (1.5)**

Lecture—15 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine or consent of instructor; successful completion of Veterinary Medicine 422. The pathogenesis and diagnosis of commonly encountered eye diseases of common domestic animals.—II. (II.) Maggs

(change in existing course—eff. winter 05)

**424. Case Studies in Veterinary Oncology (1.0)**

Lecture—10 sessions. Prerequisite: second-year standing in the School of Veterinary Medicine and consent of instructor. The internal medicine subspecialty of oncology. Clinical considerations and basic tenets of tumor biology. (S/U grading only.)—I. (I.) Theon

(change in existing course—eff. fall 05)

**431R. Advanced Veterinary Neurology/Neurosurgery (2.0)**

Seminar—4 hours. Prerequisite: graduate clinical student (resident) in the Veterinary Medical Teaching Hospital; consent of instructor. Lectures/discussions/literature reviews of diagnosis and medical/surgical treatment of neurological diseases of animals. Relevant neurologic and neurosurgical topics from human medicine will be addressed. May be repeated for credit up to 12 times for 24 units of credit. (S/U grading only.)—I, II, III, IV (I, II, III, IV) LeCouteur

(new course—eff. fall 05)

**450. HACCP & Risk Assessment in Pre and Postharvest Food Safety (3)**

Lecture/discussion—3 hours. Prerequisite: first-, second-, third-year or MPVM standing in the School of Veterinary Medicine; Master of Public Health students, advanced undergraduate and graduate students from Food Science and Animal Science or consent of instructor. Application of the Hazard Analysis-Critical Control Point (HACCP) system in the food industry, for regulatory agencies; and in the preharvest area of food production. Development of HACCP plans. (S/U grading only.)—II. (II.) Cliver, Hajmeer

(change in existing course—eff. winter 05)

**461L. Small Animal Orthopedic Surgery Laboratory (0.4)**

Laboratory—4 sessions. Prerequisite: course 461 concurrently, third-year standing in the School of Veterinary Medicine. Hands-on experience in application of external coaptation and basic principles of application of different types of fixation for fractures. (S/U grading only.)—II. (II.) Schultz

(change in existing course—eff. winter 05)

**467. Small Animal Anesthesiology (2)**

Lecture—20 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. The safe clinical administration of anesthetic drugs to small animals. Clinical applications, indications and contraindications, methods of use of common anesthetic drugs and techniques will be discussed.—II. (II.) Ilkiw

(change in existing course—eff. winter 05)

**469. Equine Surgery (3)**

Lecture—30 sessions. Prerequisite: third-year standing in the School of Veterinary Medicine. Appropriate methods of diagnosis for surgical diseases, provide an understanding of different treatment options, and develop a framework for establishing a prognosis for the disease considering particular uses of horses.—II. (II.) Snyder

(change in existing course—eff. winter 05)

**491. Anesthesia/Critical Care Basic Science Conference (1.0)**

(cancelled course—eff. fall 05)

**491R. Anesthesia/Critical Care Basic Science Management Conference (1.2)**

Discussion—12 sessions. Prerequisite: resident in the Veterinary Medical Teaching Hospital or consent of instructor. Physiology, pharmacology and clinical practice as it relates to anesthetic management of veterinary patients. May be repeated three times for credit. (S/U grading only.)—I, II, III. (I, II, III.) Pypendop

(new course—eff. fall 05)

**493. Anesthesia/Critical Care Case Management Conference (1.0)**

(cancelled course—eff. fall 05)

**493R. Anesthesia/Critical Care Case Management Conference (1.2)**

Discussion—12 sessions. Prerequisite: resident in the Veterinary Medical Teaching Hospital or consent of instructor. Discussion of VMTH case material to illustrate specific medical problems and their preventive and corrective management as it pertains to anesthesia and critical care. May be repeated three times for credit. (S/U grading only.)—I, II, III. (I, II, III.) Pypendop

(new course—eff. fall 05)

# Viticulture and Enology

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## New and changed courses in Viticulture and Enology (VEN)

### Upper Division Courses

#### 123. Analysis of Musts and Wines (2)

Lecture—2 hours. Prerequisite: Chemistry 2C and 8B or equivalent; Agricultural Management and Rangeland Resources 21 or equivalent. Students enrolled in the lecture only portion of the course will be required to enroll in 1 unit of course 199/299. Fundamental principles of analytical chemistry as they relate to specific methods used in winemaking.—I. (I.) Ebeler

(change in existing course—eff. spring 05)

#### 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). Fundamental principles of analytical chemistry as they relate to specific methods used in winemaking. 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. Enrollment restricted to upper division and graduate students in Viticulture & Enology; others by approval of instructor. GE Credit: Wri.—I. Ebeler

(change in existing course—eff. spring 05)

#### 125. Wine Types and Sensory Evaluation (2)

Lecture—2 hours. Prerequisite: course 124; Agricultural and Rangeland Management 120 or Statistics 100 or 106. Principles of sensory evaluation and application to wines. Factors influencing wine flavor, data from sensory analysis of model solutions—III. (III.) Heymann

(change in existing course—eff. spring 05)

#### 135. Wine Technology and Winery Systems (5)

Lecture—3 hours; discussion/laboratory—2 hours. Prerequisite: course 124. Process technologies and process systems that are used in modern commercial wineries. Lectures, demonstrations, problem solving sessions, and possible field trips. Includes grape preparation and fermentation equipment; post-fermentation processing equipment; winery utilities, cleaning systems, and waste treatment.—III. (III.) Block

(change in existing course—eff. spring 05)

# Wildlife, Fish, and Conservation Biology

## Changes in B.S. Major Requirements for Wildlife, Fish, and Conservation Biology Major

|   | UNITS        |
|---|--------------|
| <b>Written/Oral Expression</b> .....  | <b>8</b>     |
| University Writing Program 1 .....  | 4            |
| Communication 1 .....   | 4            |
| Above requirements simultaneously satisfy the College requirements.   |              |
| <b>Preparatory Subject Matter</b> .....   | <b>47-53</b> |
| Biological Sciences 1A, 1B, 1C .....  | 15           |
| Chemistry 2A, 2B, 8A, 8B .....  | 16           |
| Mathematics 16A, 16B .....  | 6            |
| Physics 1A, 1B or 7A, 7B, 7C .....  | 6-12         |
| Statistics 100, 102 or Agricultural Management and Rangeland Resources 120 .....  | 4            |
| <b>Breadth/General Education</b> .....  | <b>6-24</b>  |
| Satisfaction of General Education requirement   |              |
| <b>Depth Subject Matter</b> .....   | <b>49-61</b> |
| Students graduating with this major are required to attain at least a C average (2.0) in all courses taken at the university in depth subject matter.   |              |
| Environmental Science and Policy 100 or Evolution and Ecology 101 .....   | 4            |
| Evolution and Ecology 100 .....   | 4            |
| Biological Sciences 101 .....   | 4            |
| Neurobiology, Physiology, and Behavior 101 .....  | 5            |
| Anatomy, Physiology, and Cell Biology 100 or Evolution and Ecology 105 .....  | 3-4          |
| Choose three lecture courses and two (laboratory) courses.  |              |
| Wildlife, Fish, and Conservation Biology 110, (110L), 111, (111L), 120, (120L), or Evolution and Ecology 134, (134L) .....  | 12-13        |
| Wildlife, Fish, and Conservation Biology 122 and Neurobiology, Physiology, and Behavior 102, and either Wildlife, Fish, and Conservation Biology 121 or 130 .....   | 11-12        |
| Choose one course (two recommended) from Statistics 104, 106 or 108 .....   | 3-8          |
| Wildlife, Fish, and Conservation Biology 100, or 101 and 101L, or 102 and 102L .....  | 3-7          |
| <b>Restricted Electives</b> .....   | <b>9-34</b>  |
| Choose one from the nine Areas of Specialization shown below. Students must maintain a C average (2.0 GPA) and pass all course work in their chosen specialization.   |              |
| <b>Areas of Specialization</b>  |              |
| 1. <i>Behavioral ecology</i> : Complete Wildlife, Fish, and Conservation Biology 141. Choose one course from Neurobiology, Physiology, and Behavior 150 or Entomology 104. Choose two courses from Animal Science 103, 104, 105, Anthropology 101, 122A, 128A, 154A, 154B, Neurobiology, Physiology, and Behavior 152, 159, 162, Psychology 127, or Wildlife, Fish, and Conservation Biology 151. |              |
| 2. <i>Conservation biology</i> : Complete Wildlife, Fish, and Conservation Biology 154 and 155. Choose one course from Environmental Science and Policy 161, 166, 170 or 171. Choose one course from a or b:  |              |

- a. Plant Biology 117, Environmental Horticulture 160, Evolution and Ecology 117, 147, or Wildlife, Fish, and Conservation Biology 156;
- b. Evolution and Ecology 115, 138, or Wildlife, Fish, and Conservation Biology 157, 158.
3. *Ecotoxicology and disease ecology*: Complete Wildlife, Fish, and Conservation Biology 153, 158 and either Biological Sciences 102, 103 or Animal Biology 102, 103. Choose one course from a or b:
- a. Environmental Toxicology 101, 112A (112B recommended) or 138;
- b. Pathology, Microbiology, and Immunology 101, Medical Microbiology 115 or 116.
4. *Fisheries biology*: Complete Wildlife, Fish, and Conservation Biology 102, 102L, 120, 120L and 121. Complete one of the following options:
- Option 1: Complete Environmental Science and Policy 116 or Evolution and Ecology 115; complete the Bodega Marine Lab Spring Quarter Program.
- Option 2: Complete Biological Sciences 102, 103, or Animal Biology 102, 103; complete one course from a and one course from b:
- a. Entomology 116, Evolution and Ecology 112-112L or Environmental Science and Policy 151L;
- b. Environmental Science and Policy 116, 151, Evolution and Ecology 115, Geology 175, Hydrologic Science 122, or Wildlife, Fish, and Conservation Biology 157.
- Option 3: Complete one course from Entomology 116, Evolution and Ecology 112-112L or Environmental Science and Policy 151L. Choose four courses from Environmental and Resource Sciences 100, Environmental Science and Policy 116, 151, Evolution and Ecology 115, Geology 175, Hydrologic Science 122, 143 or Wildlife, Fish, and Conservation Biology 157.
5. *Physiological ecology*: Complete Wildlife, Fish, and Conservation Biology 121 and 130 and either Biological Sciences 102, 103 or Animal Biology 102, 103. Choose two courses from Neurobiology, Physiology, and Behavior 126, 127, 128, 140 or 141.
6. *Wildlife damage management*: Complete Wildlife, Fish, and Conservation Biology 152, Agricultural Management and Rangeland Resources 105, Evolution and Ecology 104, and choose one course from Nature and Culture 140 or Veterinary Medicine 170.
7. *Wildlife biology*: Complete Wildlife, Fish, and Conservation Biology 100 or 101-101L, Wildlife, Fish, and Conservation Biology 151, and two courses from Evolution and Ecology 134L or Wildlife, Fish, and Conservation Biology 110L or 111L; and
- a. Choose one course from Plant Biology 102, 108, 117, 144, 147, 178, or Evolution and Ecology 117; and
- b. Choose one course from Agricultural Management and Rangeland Resources 130, Environmental Science and Policy 155, Environmental Horticulture 160, Wildlife, Fish, and Conservation Biology 155, 156 or 157; and
- c. Choose two courses from Environmental Science and Policy 121, Wildlife, Fish, and Conservation Biology 136, 152, 153, 154 or 158.

8. *Population Dynamics*: Complete Mathematics 16C (17A-17B-17C or 21A-21B-21C recommended), Statistics 108, Environmental Science and Policy 121 and Engineering 6. Complete one additional upper division statistics course (e.g. Statistics 104, 106; note that Statistics 100, 102 do not fulfill this requirement).

9. *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 4-6 courses with a common theme.

**Unrestricted Electives ..... 0-62**

**Total Units for the Degree (minimum) ..... 180**

**Major Adviser. D. Kelt**

Students transferring to 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. See the receptionist in 1088 Academic Surge Building or telephone (530) 754-4323.

**Graduate Study.** See the Graduate Studies chapter in this catalog.

**New and changed courses in Wildlife, Fish, and Conservation Biology (WFC)**

**Graduate Courses**

**293. Seminar in Wildlife Disease and Ecology (2)**

(cancelled course—eff. fall 05)

## Women and Gender Studies

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### New and changed courses in Women and Gender Studies (WMS)

#### Lower Division Courses

##### 136. Topics in Gender, Production, Consumption and Meaning (4)

Lecture/discussion—3 hours; term paper Construction of gender through production and consumption of goods and services. Transnational movement of peoples and products. Topics may include fashion, film, food, and technology. May be repeated for credit. GE Credit: ArtHum, Div, SocSci, Wri.—On demand. Gopinath, Ho, Kaiser, Kuhn, Nettles, Rabine, Rodriguez

(new course—eff. spring 05)

##### 165. Feminist Media Production (6)

Fieldwork—6 hours; lecture/discussion—3 hours; laboratory—3 hours. Prerequisite: one course in Women and Gender Studies or consent of instructor. Basic media production and community service. Video, audio and photography instruction; feminist community documentary; video ethnography; video journals; alternative representations of fashion and women's bodies. Fundamentals of camera and microphone operation, interviewing techniques, and editing. May be repeated two times for credit if topic differs. Not offered every year. GE credit: ArtHum, Div, SocSci.—Ross

(new course—eff. winter 05)

#### Graduate Courses

##### 299D. Dissertation Research and Writing (4)

Prerequisite: courses 200A and 200B; fulfillment of course requirements for the DE in Feminist Theory and Research, advancement to candidacy. (S/U grading only.)

(new course—eff. spring 07)

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