

BIOLOGICAL SCIENCES

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Courses given in Biological Sciences have the subject code BIOSCI. For a complete list of subject codes, see Appendix.

The facilities and personnel of the Department of Biological Sciences are housed in the Gilbert Building, Herrin Laboratories, Herrin Hall, the Jasper Ridge Biological Preserve, the Clark Center and the Lokey Chemistry/Biology Building on the main campus, and at the Hopkins Marine Station in Pacific Grove on Monterey Bay.

The department provides: (1) courses designed for the non-major; (2) a major program leading to the B.S. degree; (3) a minor program; (4) a coterminal program leading to the M.S. degree; (5) a terminal program leading to the M.S. degree; and (6) a program leading to the Ph.D. degree.

Course and laboratory instruction in the Department of Biological Sciences conforms to the "Policy on the Use of Vertebrate Animals in Teaching Activities," the text of which is available at <http://www.stanford.edu/dept/DoR/rph/8-2.html>.

The Jasper Ridge Biological Preserve is a 1,200 acre natural area containing an unusual diversity of plant communities. It is managed solely for teaching and research purposes and is available to investigators from various institutions. Stanford-based research at Jasper Ridge currently concentrates on physiological, ecological, and population studies. More information is available at <http://jasper1.stanford.edu>.

Special laboratory facilities for marine research are described in the pamphlet *Hopkins Marine Station*, available at the department's student services office (Gilbert 108) or on the Hopkins Marine Station web site at <http://www-marine.stanford.edu>. Courses taught at Hopkins Marine Station with the subject code BIOHOPK are listed directly after BIOSCI courses in this section.

The department's large collections of plants (Dudley Herbarium), fishes, reptiles, and amphibians, as well as smaller collections of birds,

mammals, and invertebrates, are housed at the California Academy of Sciences in San Francisco, where they, and extensive collections of the academy, are available to those interested in the systematics of these groups. Entomological collections, restricted to those being used in particular research projects, are housed in the Herrin Laboratories. No general collections are maintained except for teaching purposes.

The Falconer Biology Library in Herrin Hall contains over 1,200 current subscriptions and an extensive collection of monographs and reference works. A specialized library is maintained at the Hopkins Marine Station.

UNDERGRADUATE PROGRAMS BACHELOR OF SCIENCE ADVISING

Most members of the Biological Sciences faculty are available for advising on such academic matters as choice of courses and career plans. The student services office maintains a current list of faculty advisers, advising schedules, and research interests.

The student services office is prepared to answer questions on administrative matters, such as requirements for the major, approved out-of-department electives, transfer course evaluations, and petition procedures. This office also distributes the department's *Bachelor of Science Handbook*, which delineates policies and requirements, as well as other department forms and information handouts.

Each undergraduate interested in the Biological Sciences major is required to select a department adviser as part of the major declaration process. Students who plan to attend medical or graduate school, enroll in the honors or coterminal programs, take courses at Hopkins Marine Station, or attend one of the overseas campuses will find their faculty adviser particularly helpful.

REQUIREMENTS

Candidates for the B.S. degree must complete:

Core Courses and Electives—

<i>Courses</i>	<i>Units</i>
BIOSCI 41*	5
BIOSCI 42*	5
BIOSCI 43*	5
BIOSCI 44X	4
BIOSCI 44Y (may be replaced by 4 units of 175H, or 176H)	4
BIOSCI 54 (in combination with 55, substitutes for BIOSCI 44X,Y)	3
BIOSCI 55	5
Total	23
Electives	24

* Letter grade only.

*Required Cognate Courses—*Students may take up to two cognate courses credit/no credit (CR/NC).

1. Introductory, organic, and physical chemistry with lab: CHEM 31 (or 32), 33, 35, 36, 130 (or 132), 131, 135 (or 171). For those interested in ecology and evolution biology, an advanced Mathematics course of 100-level or above may be substituted for 130 or 132.
2. General Physics: PHYSICS 21, 22, 23, 24; or 51, 53, 55; or 28, 29.
3. Math through calculus: MATH 19, 20, 21; or 41, 42.
4. One additional cognate course in Mathematics, Statistics, or Computer Science: MATH 51 or beyond; BIOSCI 141*; BIOHOPK 174H*; PSYCH 10; STATS 60 or beyond; or CS 106A or X.

* If taken to fulfill the additional cognate requirement, these courses do not count toward the 24 elective unit requirement.

*Electives—*Electives must be 100-level or above and selected from the offerings in the Department of Biological Sciences or from the list of approved out-of-department electives. This list may be obtained from the student services office. Stanford Introductory Seminars may not be used to fulfill this requirement.

The program for the junior and senior year should include a total of 24 elective units beyond the core. The courses making up these units should include at least one course from at least three of the following four areas. The rest of the 24 units can include more courses from this central menu, courses available in diverse areas directly after the core, or ad-

vanced courses for which menu courses are prerequisites. A complete central menu course listing including inactive and alternate year courses is available in the student services office. Active central menu courses are:

1. *Molecular*

- BIOSCI 104/200. Advanced Molecular Biology
- BIOSCI 118. Genetic Analysis of Biological Processes*
- BIOSCI 126. Cell Biology: Intracellular Trafficking and Organelle Biogenesis*
- BIOSCI 133. Genetics of Prokaryotes*
- BIOSCI 134. Replication of DNA*
- BIOSCI 162/262. Advanced Microbial Genetics and Genomics*
- BIOSCI 187/287. Biochemistry
- BIOSCI 230. Molecular and Cellular Immunology*

2. *Cell/Developmental*

- BIOSCI 118. Genetic Analysis of Biological Processes*
- BIOSCI 126. Cell Biology: Intracellular Trafficking and Organelle Biogenesis*
- BIOSCI 129A. Cellular Dynamics I: Cell Motility and Adhesion
- BIOSCI 129B. Cellular Dynamics II: Building a Cell
- BIOSCI 133. Genetics of Prokaryotes*
- BIOSCI 134. Replication of DNA*
- BIOSCI 154. Molecular and Cellular Neurobiology†
- BIOSCI 160. Developmental Biology
- BIOSCI 162/262. Advanced Microbial Genetics and Genomics*
- BIOSCI 230. Molecular and Cellular Immunology*

3. *Organismal*

- BIOSCI 110. Vertebrate Biology
- BIOSCI 112. Human Physiology
- BIOSCI 120. General Botany
- BIOSCI 124. Plant Physiological Ecology
- BIOSCI 153/PSYCH 120. Cellular Neuroscience
- BIOSCI 154. Molecular and Cellular Neurobiology†
- BIOHOPK 161H. Invertebrate Zoology
- BIOHOPK 162H. Comparative Animal Physiology
- BIOHOPK 167H/267H. Nerve, Muscle, and Synapse
- BIOHOPK 169H. Neurobiology and Behavior
- BIOHOPK 171H. Ecological and Evolutionary Physiology
- BIOSCI 213. Biology of Viruses
- MI 185. Topics in Microbiology

4. *Ecology and Evolution*

- BIOSCI 101. Ecology
- BIOSCI 121. Biogeography
- BIOSCI 124. Plant Physiological Ecology
- BIOSCI 127/220. Ecology of Microorganisms
- BIOSCI 136. Evolutionary Paleobiology
- BIOSCI 142. Topics in Theoretical Ecology
- BIOSCI 143/243. Evolution
- BIOSCI 145. Behavioral Ecology
- BIOHOPK 163H. Oceanic Biology
- BIOHOPK 172H/272H. Marine Ecology
- BIOSCI 184. Principles and Practice of Biosystematics

* May be used to satisfy either area I or area II requirement.

† May be used to satisfy either area II or area III requirement.

No more than 6 units from any combination of individual instruction courses (175H, 176H, 198, 199, 290, 291, or 300) may be applied toward the total number of elective units. No more than 6 units applied toward the elective unit requirement may be taken CR/NC; this policy does not apply to transfer credit.

Students intending to pursue research careers in biology, especially in ecology, population genetics, or theoretical biology, should be aware that MATH 19, 20, 21, or MATH 41, 42 are minimum mathematics requirements for the B.S. degree in Biological Sciences. Substantial additional training in mathematics, including differential equations, linear algebra, and probability theory, is often highly advisable. Students should consult the Biological Sciences faculty to discuss individual needs.

Additionally, even though only two or three quarters of physics are required, students should be aware that many graduate and professional

schools (for example, Medicine and Education) require a year of general physics with a lab. Biological Sciences majors are therefore advised to take the year-long physics sequence PHYSICS 21, 22, 23, 24, 25, 26.

For students considering residence at Hopkins Marine Station during the junior or senior year, or an overseas program, the department recommends fulfilling as many University General Education Requirements as possible in the first two years at Stanford.

TYPICAL SCHEDULE FOR A FOUR-YEAR MINIMUM PROGRAM

FIRST YEAR

<i>Course No. and Subject</i>	<i>Qtr. and Units</i>		
	<i>A</i>	<i>W</i>	<i>S</i>
CHEM 31, 33, 35, 36	4	4	7
MATH 19, 20, 21. Calculus and Analytic Geometry	3	3	4
Freshman requirements or electives	8	8	6
Totals	15	15	17

SECOND YEAR

BIOSCI 41. Principles of Biology *	5		
BIOSCI 42. Principles of Biology*		5	
BIOSCI 43. Principles of Biology*			5
BIOSCI 44. Core Experimental Laboratory		4	4
CHEM 130 or 132, 131, 135 (or 171). Organic and Physical Chemistry	8	3	
General Education Requirements or electives	3	5	8
Totals	16	17	17

* Letter grade only.

THIRD YEAR

PHYSICS 21, 22, 23, 24. Introductory Physics	4	4	
General Education Requirements or electives	11	11	11
Totals	15	15	11

FOURTH YEAR

Electives	15	15	15
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SPECIALIZATION TRACKS

In addition to the undergraduate major program described above, the Department of Biological Sciences offers these four specialized tracks for students wishing to concentrate their studies in particular areas of biology:

1. Biochemistry and Biophysics
2. Marine Biology
3. Molecular and Cellular Biology
4. Neurobiology

Candidates for the B.S. degree in Biological Sciences with an area of specialization are expected to complete:

1. a specific set of cognate courses
2. a specific set of courses in the chosen area of specialization
3. the equivalent of the requirements for graduation with honors in Biological Sciences.

For further information on the specialized track programs, including detailed descriptions of their requirements and deadlines, see <http://www.stanford.edu/dept/biology/programs.html>.

TRANSFER STUDENTS

Because of differences between Stanford undergraduate courses and prerequisites and those of many other institutions, transfer students may face problems not encountered by entering freshmen. Transfer students are strongly urged to visit the student services office in Gilbert 108 during transfer orientation to obtain information on course credit evaluations. Course catalogs, syllabi, and/or lecture notes from the former institution are necessary in the evaluation and accreditation process. Transfer students are encouraged to find a faculty adviser soon after arrival.

All transfer courses intended to fulfill department requirements must be evaluated on Evaluation of Course Content forms (available in the student services office), which are kept in the student's file. This department procedure is in addition to the process of having units earned at other institutions transferred for Stanford credit that appear on the Stanford transcript.

The department authorizes transfer credit only for courses whose content parallels the Stanford courses and that have comparable prerequisites (not merely a comparable course title). To substitute a course taken elsewhere for an upper-division Stanford course, course content must be approved by a department faculty member teaching in the area of the course. Submit as complete a course description as practical (including prerequisites and their descriptions) using the Evaluation of Course Content form available in the student services office before taking an off-campus course. Students must provide exams, reading lists, term papers, and other materials for the evaluation. Credit is not allowed for projects for which the student was paid, nor is credit allowed for work of a purely technical or clinical nature. Credit for natural history, culture biology, and similar courses is rarely appropriate and can be obtained only by meeting the same criteria outlined above. Academic performance is verified upon receipt of the official transcript. Please note that semester units are not converted to quarter units; units awarded for transfer credit are determined by faculty evaluation.

MINORS

Students interested in the minor in Biological Sciences must declare the minor and submit their course plan online via Axxess no later than two quarters prior to the student's intended quarter of degree conferral. The Biological Sciences minor requires a minimum of six courses meeting the following criteria:

1. All courses must be taken for a letter grade.
2. All courses must be worth 3 or more units.
3. All courses, other than the Biology Core (41, 42, or 43), must be at or above the 100-level. Stanford Introductory Seminars may not be used to fulfill this requirement.
4. Courses used to fulfill the minor may not be used to fulfill any other department degree requirements (minor or major).
5. At least one course from the Biology Core must be taken.
6. The Biology Core Laboratory (44X and 44Y) does not count towards the minor degree.
7. All courses must be Department of Biological Sciences' elective courses or recognized out-of-department elective courses. See the "Out-of-Department Electives" list available in the student services office.
8. Elective credit for research (BIOSCI 199/199X) is limited to a maximum of 3 units.

Note: No general petitions are accepted for minor requirements.

HONORS PROGRAM

To graduate with departmental honors, a student must:

1. Submit an honors petition proposal to the department's undergraduate research coordinator by the fifth Friday of the quarter, two quarters prior to graduation. For instance, students graduating Spring Quarter must submit petitions no later than mid-Autumn Quarter.
2. Complete at least 10 units of an approved (BIOSCI 199 or BIOSCI 199X) research project.
3. Obtain at least a 3.0 (B) grade point average (GPA) in all Biological Sciences major requirements taken at Stanford (cognate, core, and elective courses). Grades earned from teaching (290 and 291) and research (175H, 176H, and 199) are not computed into this GPA.
4. If graduating in June, participate in the Biological Sciences Honors Symposium by presenting a poster or giving an oral presentation. The symposium is at the end of May. If graduating Autumn or Winter Quarter, produce a poster.
5. Complete and submit, by the end of the quarter of graduation, two signed and bound copies of an honors thesis approved by at least two readers (one of whom must be from the faculty of the Department of Biological Sciences and both must be Academic Council members). In addition, students must submit two copies of the honors thesis abstract (one paper copy and one electronic copy), which include student name, thesis title, research sponsor, and sponsor's department.

Further information on the honors program is available in the office of the Undergraduate Research Coordinator in Gilbert 118, as well as on

the web at <http://biohonors.stanford.edu>. Questions should be directed to the Undergraduate Research Coordinator, Dr. Kristín Black (kblack@stanford.edu, 650-723-3767, Gilbert 118).

REQUIREMENTS FOR PREHEALTH PROFESSIONS

Students who are not biology majors should take at least the following courses in Biological Sciences: 44X, 44Y; or 41, 42, 43, and such upper-division electives as may be recommended by Stanford's Undergraduate Advising Center, Sweet Hall.

COTERMINAL B.S. AND M.S. DEGREES

The Department of Biological Sciences admits a limited number of undergraduates to work for coterminal B.S. and M.S. degrees in Biological Sciences. Students must apply to the program once they earn a minimum of 120 units toward graduation (UTG). This includes allowable advanced placement (AP) and transfer credit. Students are required to submit a complete application no later than the third week of the quarter prior to the expected completion of their undergraduate degree. The application includes a statement of purpose, a Stanford transcript, official GRE or MCAT scores, two letters of recommendation from faculty members in this department (if two such letters are not available, a letter from someone outside the department can be used in lieu of one of those, but that typically reduces the likelihood of admission), a list of courses in which they intend to enroll to fulfill degree requirements, and an application fee of \$50. A minimum GPA of 3.0 is necessary in all courses required for the undergraduate degree in Biological Sciences. Students must meet all requirements for both the B.S. and M.S. degrees. They must complete 15 full-time quarters (or the equivalent), or three full quarters after completing 180 units. Unit requirements for a coterminal program are 180 units for the bachelor's degree and 45 units for the master's degree. A more detailed description of the coterminal degree program may be obtained from the student services office.

Coterminal students are permitted to use course work taken up to two quarters immediately prior to their first graduate quarter toward their graduate degree. Students may defer admission to the coterminal program up to one quarter after admission, as long as they still meet all University and departmental requirements for coterminal admission.

For University coterminal degree program rules and University application forms, see <http://registrar.stanford.edu/publications/#Coterm>.

GRADUATE PROGRAMS MASTER OF SCIENCE

For information on the University's basic requirements for the M.S. degree, see the "Graduate Degrees" section of this bulletin.

The M.S. degree program offers general or specialized study to individuals seeking biologically oriented course work, and to undergraduate science majors wishing to increase or update their science background or obtain advanced research experience. Students who have majored in related fields are eligible to apply, but must complete, or have completed by the time of graduation, the equivalent of a Stanford B.S. in Biological Sciences.

The M.S. program consists of Department of Biological Sciences (or otherwise pre-approved) course work totaling at least 45 units at or above the 100-level of academic credit, distributed as follows:

1. A minimum of 36 units must be Department of Biological Sciences' courses or approved out-of-department electives (a list is available in the student services office).
 - a) At least 18 of these 36 units must be courses designated primarily for graduate students (generally at the 200-level or above), excluding research and teaching units.
 - b) Up to 9 of these 36 units may be advanced-level cognate courses in chemistry, computer science, mathematics, physics, or statistics beyond the level required for the undergraduate degree.
 - c) Up to 18 of the 36 units may be a combination of biological research and teaching (BIOSCI 175H, 176H, 198, 199, 290, 291, or 300).

2. The remaining 9 units may come from any other Stanford course work at or above the 100 level other than research or teaching. Note, however, that the program of proposed courses must form an intellectually coherent whole. Thus, it is acceptable for a master's student to take a course far afield from science if the student can make a case that it makes sense in the context of the master's program. For example, one could make an argument for taking an economics class with relevance to issues of ecology and conservation, or a language course if a key scientific literature happens to be in that language.

Each candidate designs a coherent program of study in consultation with her or his department adviser. Although there are no specific courses required, program proposals must adhere to department parameters.

A program proposal, signed by the student's adviser and approved by the chair of the M.S. Committee, must be filed during the first month of the first quarter of enrollment. Students may take only 6 units CR/NC and must receive a grade of 'B-' or better in all courses taken for the degree.

To apply, students submit an application for admission to the M.S. program, two letters of recommendation, official transcripts, and official Graduate Record Examination (GRE) scores. The application is available online at <http://gradadmissions.stanford.edu>. Applicants should plan on taking the GRE at least six weeks prior to the application deadline to insure that the official scores are available when applications are evaluated. Applications are accepted for Autumn Quarter only; the deadline is March 15. Financial support is not available from either the department or the University for students in this program.

MASTER OF ARTS IN TEACHING

The Master of Arts, Teaching degree is offered jointly by this department and the School of Education. The degree is intended for candidates who have a teaching credential and wish to strengthen their academic preparation. The program consists of a minimum of 25 units in the teaching field and 12 units in the School of Education. Detailed requirements are outlined in the "School of Education" section of this bulletin or may be obtained from the Admissions Director, School of Education.

TEACHING CREDENTIALS

For information concerning the requirements for teaching credentials, consult the "School of Education" section of this bulletin or address an inquiry to the Credential Administrator, School of Education.

DOCTOR OF PHILOSOPHY

For information on the University's basic requirements for the Ph.D. degree, see the "Graduate Degrees" section of this bulletin.

Preparation for Graduate Study—Students seeking entrance to graduate study in Biological Sciences ordinarily should have the equivalent of an undergraduate major in Biological Sciences at Stanford. However, students from other disciplines, particularly the physical sciences, are also encouraged to apply. Such students are advised at the time of initial registration on how they should complete background training during the first year of graduate study. In addition to the usual basic undergraduate courses in biology, it is recommended that preparation for graduate work include courses in chemistry through organic chemistry, general physics, and mathematics through calculus.

Application, Admission, and Financial Aid—Prospective graduate students should apply online at <http://gradadmissions.stanford.edu>. Prospective students may also request application information, instructions, and materials from Graduate Admissions, the Registrar's Office. The department's program is divided into three separate tracks: ecology, evolution, and marine track; integrative and organismal track; and molecular, cellular, developmental, and genetics track. Applications to the three tracks are evaluated separately; all applicants should specify the track which interests them. The deadline for receiving applications is December 15.

Scores on the general test and the advanced biology, biochemistry, cellular and molecular biology, or chemistry test of the Graduate Record Examination (GRE) are required. Applicants should plan on taking the GRE at least one month prior to the application deadline to insure that the official scores are available when applications are evaluated.

Competition for admission to the Ph.D. program is keen and in recent years it has been possible to offer admission to only 10 percent of the applicants.

Admitted students normally are offered financial support in the form of Stanford Graduate Fellowships, Biology research assistantships, NIH traineeships, or Biological Sciences fellowships.

Qualified applicants should apply for predoctoral national competitive fellowships, especially those from the National Science Foundation. Applicants to the Ph.D. program should consult their financial aid officers for information and applications.

General Departmental Requirements—An admitted applicant is required to fulfill the requirements of the University as outlined in the "Graduate Degrees" section of this bulletin and the department requirements stated below.

Course work is planned in consultation with an advising committee assigned for his or her track. In addition, all students must take a course on the ethical conduct of research, which includes the ethics courses in the Medical School or another similar department-approved course.

1. Teaching experience and training are part of the graduate curriculum. Each student assists in teaching one course in the department's core lecture (41, 42, or 43) or lab courses (44X, 44Y), and a second course that can be either a core course or central menu course. Three quarters are required for ecology/evolution and marine students.
2. Graduate seminars devoted to the discussion of current literature and research in particular fields of biology are an important means of attaining professional perspective and competence. Seminars are presented under individual course listings or are announced by the various research groups. A department seminar meets on most Mondays at 4 p.m. Topics of current biological interest are presented by speakers from Stanford and other institutions and are announced in the weekly *Stanford Report*. Graduate students are expected to attend.
3. Third Year and Beyond: each student must meet with the Advising Committee beginning the third year, and each year thereafter prior to the end of the Spring Quarter. The committee signs a form to ensure compliance. During Autumn Quarter of the fourth year, candidates must meet with their committee to evaluate the project and to discuss financial support, if required, beyond the fourth year. Advanced students are required to meet with their committee at least twice a year. Academic requirements for the three tracks are as follows:

Molecular/Cell Ph.D. Track Requirements—

1. *First Year*:
 - a) *Advising Committee*: shortly after arrival, each entering student meets with the First-Year Advising Committee. The committee reviews the student's previous academic work and current goals and advises the student on a program of Stanford courses, some of which may be required and others recommended. Satisfactory completion of the Core Curriculum (below) is required of all students.
 - b) *Core Curriculum*: all students are required to take the following courses for a letter grade, unless previous course work has fulfilled these requirements:
 - BIOSCI 203. Advanced Genetics
 - BIOSCI 214. Cell Biology of Physiological Process
 - BIOC 201. Advanced Molecular Biology, or BIOC 241. Biological Macromolecules
 Two or three additional courses are selected from the student's area of specialization. In addition, the following are required:
 - BIOSCI 301. Frontiers in Biology (satisfies first-year talk requirement)
 - MED 255. Responsible Conduct of Research
 - c) *Lab Rotations*: successful completion of rotations in three different laboratories is required of all first-year students. As lab space is limited, students with a definite interest in a particular lab should make arrangements as early as possible. Written petitions for exemptions to requirements "Core Curricula" and "Lab Rotations" are considered by the advising committee. Approval is contingent upon special circumstances and is not routinely granted.

- d) *Dissertation Lab*: by the end of Spring Quarter, each first-year student is expected to have selected a lab in which to perform dissertation research and to have been accepted by the faculty member in charge. Students and faculty must wait until April 15 to discuss the choice of a dissertation lab. In consultation with that faculty member (who at this point becomes the student's adviser), the student chooses a projected field of expertise that is broader than the research of the adviser's lab, such as Developmental Biology or Plant Biology.
- e) *Seminar*: each student must present a public seminar that is evaluated by two faculty members. Evaluation consists of meeting with each faculty member within one week following the seminar to obtain feedback and signatures. Faculty may require an additional seminar presentation.
2. *Second Year*: each student must pass a two-part qualifying exam.
- a) *Area Proposal*: the area proposal is a research proposal that lies within the student's field of expertise, but is in an area other than that of the proposed dissertation research. The written proposal should be prepared in the same detail as a grant application, including references, plans for specific experiments, and discussion of the interpretation of possible experimental results. The written proposal must be turned in to the student services office by the end of Autumn Quarter. Before the end of Winter Quarter, the student is examined orally on the contents of the written proposal and on general knowledge in the student's projected field of expertise, including important cognate areas. The oral examination is administered by the dissertation advising committee (consisting of the adviser and three other faculty members who have agreed to serve on the committee).
- b) *Dissertation Proposal*: before the end of Spring Quarter of the second year, the student must prepare a dissertation proposal that outlines the student's projected dissertation research. An expert assessment of the current literature is expected. After submission of the proposal to the dissertation advising committee, an oral examination is held. The student's adviser is not present at the examination, which is administered by the other members of the dissertation advising committee.
- Advancement to candidacy is contingent on satisfactory completion of both proposals and oral exams. The deadline for completion is mid-May, before the annual faculty meeting devoted to evaluation of student progress. Failure to complete these requirements on schedule results in the withholding of the graduate stipend.
3. *Third Year and Beyond*:
- a) *Dissertation and Dissertation Defense*: the finished dissertation must be turned in to the student's reading committee at least one month before the oral exam is planned. The reading committee is comprised of at least three faculty members, two of whom must be Stanford Academic Council members, and is generally comprised of members who have served on the oral examination committee. At least three weeks before the oral exam, the student checks in with the committee and must incorporate any changes they require by the time of the exam. The exam cannot be formally scheduled or publicly announced until the student receives comments; however, the student should make informal arrangements with the committee earlier to ensure that everyone is available on the projected date. A minimum of three weeks is required by the student services office to schedule appropriate rooms.
- b) *First-Year Paper*: each student must prepare and submit a paper that is evaluated by the advising committee, before the end of Spring Quarter of their first year. This paper should be a step toward the development of a dissertation proposal and may consist of an analysis of new data or a literature review and synthesis. Evaluation is in written form by two faculty members.
2. *Second Year*: the student is expected to write a major dissertation proposal. The proposal is evaluated by a committee of three faculty (the dissertation advising committee) in an oral presentation. This is to be completed by the end of Spring Quarter of the second year. Advancement to candidacy depends on satisfactory completion of the dissertation proposal. Failure to complete these requirements on schedule results in the withholding of the graduate stipend.
3. *Third Year and Beyond*:
- a) *Dissertation and Dissertation Defense*: at least one month before the oral exam takes place, the student must submit his or her dissertation to the dissertation advising committee, which then becomes the dissertation reading committee. At least two weeks before the oral exam, the student must incorporate into the dissertation any changes required by the committee. The exam cannot be formally scheduled or publicly announced until that time.

Ecology/Evolution Ph.D. Track Requirements—

1. *First Year*: each entering student is assigned a supervisory committee of three faculty members whose function is to develop an appropriate schedule of required and recommended courses and to meet once each quarter with the student during the first year.
- a) The committee of the whole, i.e., all ecology and evolution biology faculty, may meet with each student individually early in the first year.
- b) *First-Year Paper*: each student must prepare and submit a paper that is evaluated by the advising committee before the end of Spring Quarter of their first year. This paper should be a step toward the development of a dissertation proposal and may consist of an analysis of new data or a literature review and synthesis. Evaluation is in written form by two faculty members.
2. *Second Year*: the student is expected to write a major dissertation proposal. The proposal is evaluated by a committee of three faculty (the dissertation advising committee) in an oral presentation. This is to be completed by the end of Spring Quarter of the second year. Advancement to candidacy depends on satisfactory completion of the dissertation proposal. Failure to complete these requirements on schedule will result in withholding of the graduate stipend.
3. *Third Year and Beyond*:
- a) *Dissertation and Dissertation Defense*: at least one month before the oral exam takes place, the student must submit his or her dissertation to the dissertation advising committee, which then becomes the dissertation reading committee. At least two weeks before the oral exam, the student must incorporate into the dissertation any changes required by the committee. The exam cannot be formally scheduled or publicly announced until that time.

Residency Requirement—A minimum of 135 units of graduate registration is required of each candidate. The department normally accepts only full-time students for study leading to the Ph.D. degree.

COURSES

WIM indicates that the course satisfies the Writing in the Major requirement.

Additional courses not listed here are frequently offered by selected postdoctoral or advanced Ph.D. personnel in the areas of their special research competence. They are listed in the quarterly *Time Schedule*, with course descriptions available in the student services office.

INTRODUCTORY

BIOSCI2. Current Research Topics in Biological Sciences—Primarily for sophomores interested in majoring in Biological Sciences. Weekly seminars by faculty: molecular biology and genetics; theory and mathematics in biology; ecology, physiology, and the environment; molecular

Integrative/Organismal Ph.D. Track Requirements—

1. *First Year*: each entering student is assigned a supervisory committee of three faculty members whose function is to develop an appropriate schedule of required and recommended courses and to meet once each quarter with the student during the first year.
- a) All students are required to take BIOSCI 306, Current Topics in Integrative and Organismal Biology. Students specializing in integrative biology may also be asked to take appropriate graduate-level courses such as DBIO 210; MCP 215; NBIO 200, 216, 230; or PSYCH 228.

and cellular aspects of neurobiology, immunology, and developmental biology; biological chemistry; behavioral biology; and evolution.

1 unit, Aut, Win (*Black*)

BIOSCI 3. Frontiers in Marine Biology—An introduction to contemporary research in marine biology, including ecology, conservation biology, environmental toxicology, behavior, biomechanics, evolution, neurobiology, and molecular biology. Emphasis is on new discoveries and the technologies used to make them. Weekly lectures by faculty from the Hopkins Marine Station.

1 unit, Aut (*Somero*)

BIOSCI 4. Introduction to Biotechnology—The scientific basis for key biotechnologies (cell transformation, DNA cloning, organismal cloning) and contemporaneous societal reactions to such new technologies. Focus is on defining current issues with specific technologies (use of DNA screening in forensics, animal cloning, genetically modified foods). GER:2b

4 units (*Walbot*) not given 2004-05

BIOSCI 8. Frontiers in Organismal Biology—Preference to freshmen and sophomores. How animals work. Research frontiers in organismal biology including integrative physiology, biomechanics, neurobiology, and environmental physiology and ecology.

1 unit, Aut (*B. Block, Staff*)

BIOSCI 20. Introduction to Brain and Behavior—(Same as HUMBIO 21) Evolutionary principles to understand how the brain regulates behavior, described in physiological terms, and is influenced by behavioral interactions. Topics include neuron structure and function, transmission of neural information, anatomy and physiology of sensory and motor systems, regulation of body states, the biological basis of learning and memory, and behavioral abnormalities. Recommended: PSYCH 1. GER:2a

3 units, Aut (*R. Fernald*) alternate years, not given 2005-06

STANFORD INTRODUCTORY SEMINARS

BIOSCI 5N. The Sky is Falling versus Everything's Coming Up Roses: The Environmental Debate—Stanford Introductory Seminar. Preference to freshmen. How to differentiate between well-reasoned and bogus logic when addressing the world's environmental problems. Examples include comparing paranormal events with scientific findings, and examining different angles of environmental debates. Readings include Schick and Vaughn's *How to Think about Weird Things*, and Ehrlich and Ehrlich's *Betrayal of Science and Reason*. GER:2a

3 units, Aut (*Root*)

BIOSCI 6N. Climate Change: Drivers, Impacts, and Solutions—Stanford Introductory Seminar. Preference to freshmen. The scientific understanding of climate change, and the evidence, driving forces, and options for managing its impacts. GER:2a

3 units, Win (*Field*)

BIOSCI 7N. Edible Botany—Stanford Introductory Seminar. Preference to freshmen. An introduction to plant structure, function, development, and ecology through examination of plants used for food. Topics include basic botanical concepts, biogeography of domestication, and the characteristics of major plant groups. Demonstrations, field trips, presentation of student projects. GER:2a

3 units, Spr (*Preston*)

BIOSCI 10N. Light and Life—Stanford Introductory Seminar. Preference to freshmen. The importance of light for life. Focus is on active areas of research including pigments and coloration, bioluminescence (life creating light), phototaxis (light-directed movement), circadian rhythms, and vision.

3 units, Aut (*Elrad*)

BIOSCI 11N. Biotechnology in Everyday Life—Stanford Introductory Seminar. Preference to freshmen. The science that makes transgenic plants and animals possible. Current and future applications of biotechnology and the ethical issues raised. GER:2a

3 units, Aut (*Walbot*)

BIOSCI 13N. Environmental Problems and Solutions—Stanford Introductory Seminar. Preference to freshmen. Students do independent investigations of current environmental problems, analyzing differing views of them and discussing possible solutions. Each student gives two seminar presentations and leads two seminar discussions. Short, documented position papers are written for policy makers. GER:2a

3 units, Spr (*Ehrlich*)

BIOSCI 14N. Plants and Civilization—Stanford Introductory Seminar. Preference to freshmen. The role of plants in the development of civilization. Topics: the use of forests, woodlands, and grazing lands; centers of origins and spread of crops; viticulture, and wine and beer making; the spice route; the use of plants as medicine; fungi in human affairs; the global spread of weeds; engineering plants for the future; the importance of tea, coffee, sugar, potatoes, natural dyes, and rubber in societal affairs and change. GER:2a

3 units, Spr (*Mooney*)

BIOSCI 15N. Environmental Literacy—Stanford Introductory Seminar. Preference to freshmen. Lack of public understanding of the details of most environmental problems is cited as a cause of environmental deterioration. Good citizenship requires literacy about the elements of the scientific and decision making processes that accompany most environmental issues: what can happen, what are the odds, how can the credibility of sources of expertise be assessed, which components of environmental debates deal with factual and theoretical issues, and which are political value judgments? Student-led discussions, student peer review and term papers, and oral paper presentation. GER:2a

3 units, Win (*Schneider*)

BIOSCI 17N. Light, Pigments, and Organisms—(Same as CHEM 17N.) Stanford Introductory Seminar. Preference to freshmen. Multidisciplinary lab course. The molecular basis of pigments, light absorption, color, and fluorescence using chemical techniques and biological materials. Topics include: the diversity of photosynthetic pigments, how cyanobacteria modify their pigment composition in diverse light environments, and the importance of photoreceptors in assessing an organism's light environment. GER:2a

4 units, Win (*Elrad, Grossman, Bhaya, Zare*)

BIOSCI 18N. Plant Genetic Engineering—Stanford Introductory Seminar. Preference to freshmen. Flavr-Savr tomatoes, Round-Up Ready soybeans, plastic plants. Genetically modified plants. A survey of crop modifications that have been made or are currently in development. The scientific basis of genetic engineering in plants and its social, economic, and environmental consequences. Oral presentations and short term papers. GER:2a

3 units, Win (*C. Somerville, S. Somerville*)

BIOSCI 21N. Evolutionary Basis of Animal Sexual Behaviors—Stanford Introductory Seminar. Preference to freshmen. The genetic and evolutionary basis for innate sexual behavioral patterns in animals. Readings from primary scientific literature, and Olivia Judson's *Dr. Tatiana's Sex Advice for All Creation*. GER:2a

3 units, Aut (*Baker*)

BIOSCI 22N. Infection, Immunity, and the Public's Health—Stanford Introductory Seminar. Preference to sophomores. The causes and prevention of infectious diseases, focusing on the interplay between pathogens and the immune system that determines the outcome of the disease. The basic principles of microbiology, immunology, and epidemiology. Diseases of the past and present including SARS, AIDS, TB, and malaria. The roles of biological, environmental, and societal factors in disease emergence, spread, and prevention. Primary scientific literature, student-led discussions, and research projects. Prerequisite: biology background, preferably introductory college biology at the level of 41 or 42, or HUMBIO 2A, 3A. GER:2a

3 units, Spr (*Jones*)

BIOSCI 25Q. The Molecular Basis of Genetic Disease—Stanford Introductory Seminar. Preference to sophomores. Focus is on two

genetic diseases resulting from the production of protein molecules that are unable to fold into their native conformations, called conformational diseases: cystic fibrosis and amyotrophic lateral sclerosis or Lou Gehrig's disease. Hypotheses and controversies surrounding the molecular basis of these disorders, and implications for novel therapeutics. Readings from research literature. GER:2a

3 units, Spr (*Kopito*)

BIOSCI 26N. Maintenance of the Genome—Stanford Introductory Seminar. Preference to freshmen. Focus is on DNA repair systems which scan the genome to ensure genomic stability in the face of natural endogenous threats to DNA and those due to radiation and chemicals in the external environment. Redundancy of the genetic message ensured by complementary DNA strands facilitates recovery of information when one of the strands is altered. Predisposition to cancer often implicates a defective DNA repair gene. Relevance for oncology, aging, developmental biology, environmental health, and neurobiology. GER:2a

3 units, Spr (*Hanawalt*)

BIOSCI 31Q. Ants: Behavior, Ecology, and Evolution—Stanford Introductory Seminar. Preference to sophomores. Behavior: the organization of colonies, how they operate without central control, how they resemble other complex systems like brains. Ecology: how populations of colonies change, comparing the ecology of a species in SW American desert and invasive Argentine ants. Evolution: why are there so many species of ants; how are they alike, how do they differ, and why? Ants as the theme for exploring how to do research in animal behavior, ecology, and evolution. Research project will be on the invasive Argentine ant: its distribution on campus, foraging trails, and nest structure.

3 units, Aut (*Gordon*)

BIOSCI 36N. Physiology of Human Performance—Stanford Introductory Seminar. Preference to freshmen. Laboratory-oriented. For students interested and involved in sports, physical fitness, and conditioning. Students conduct studies on each other, and possibly on volunteers, involving physical activity and measurement of physiological variables before, during, and after physical activity. Focus is on the physiological systems underlying the capacity for physical activity and on the limits to increasing strength, power output, and endurance. Applicants must be willing to engage in strenuous physical activity as part of the course requirements. An equal number of male and female students preferred.

3 units, Aut (*C. Heller, Grahn*)

BIOSCI 106Q. The Heart of the Matter—Stanford Introductory Seminar. Preference to sophomores. The molecular and biochemical basis of life. Emphasis is on the methods and scientific logic that lead to advances in knowledge. The human heart and circulatory system is the unifying theme for topics such as the constituents and activities of cells, tissues, and organs; the chemicals and proteins that carry on life processes; the biotechnology revolution; the role of genes in human disease and normal functions; and the Human Genome Project. How scientific knowledge is built up through research; how biology initiates advances in medicine; and how science, engineering, and economics interact in biotechnology. Student presentations, demonstrations, and field trips.

3 units, Win (*Myers, Simoni*)

CORE

BIOSCI 41,42,43. Principles of Biology—Comprehensive study of the principles of modern biological sciences, taken in sequence, preferably in the sophomore year. Biology majors must take for a letter grade. Prerequisites: CHEM 31 (or 32), 33, 35; MATH 19, 20, 21, or 41, 42.

BIOSCI 41. Genetics, Biochemistry, and Molecular Biology—Emphasis is on macromolecules (proteins, lipids, carbohydrates, and nucleic acids) and how their structure relates to function and higher order assembly; molecular biology, genome structure and dynamics, gene expression from transcription to translation. GER:2a

5 units, Aut (*Simon, Simoni*)

BIOSCI 42. Cell Biology and Animal Physiology—Cell structure and function; principles of animal physiology (immunology, renal, cardiovascular, sensory, motor physiology, and endocrinology); neurobiology from cellular and developmental to neural regulation of physiology. GER:2a

5 units, Win (*Cyert, Jones, C. Heller, Sapolsky*)

BIOSCI 43. Plant Biology, Evolution, and Ecology—Principles of evolution: macro- and microevolution and population genetics. Ecology: the principles underlying the exchanges of mass and energy between organisms and their environments; population, community, and ecosystem ecology; populations, evolution, and global change. Equivalent to BIOHOPK 43. GER:2a

5 units, Spr (*Mudgett, Hadly, Gordon*)

BIOSCI 44X,Y. Core Experimental Laboratory—Two quarters of lab projects provide a working familiarity with the concepts, organisms, and techniques of modern biological research. Emphasis is on experimental design, analysis of data, and written and oral presentation of the experiments. Lab fee. Prerequisites: CHEM 31, 33. Recommended: Biological Sciences or Human Biology core, and statistics; 44X and Y should be taken sequentially in same year. 44Y equivalent to BIOHOPK 44Y. WIM

4 units, 44X: Win, 44Y: Spr (*Malladi, Yelton*)

BIOSCI 54. Genes, Genomes, and Proteins: Introduction to Advanced Independent Research Laboratory—Preference to sophomores. First of two-part sequence. For students interested in pursuing research-oriented careers in biological sciences. The impact of genomic information on experimental biology. Recently developed techniques at a conceptual level and examples of their application to biology. Emphasis is on primary scientific literature and hands-on analyses of genome information using online databases and computational tools. Topics include microarray analysis, the use of comprehensive genome-wide mutant collections, and investigation of the proteome. Limited enrollment. Prerequisite: consent of instructors. 54,55 substitutes for 44X,Y to fulfill Biological Sciences major lab requirement. GER:2a,WIM

3 units, Win (*Cyert, Stearns*)

BIOSCI 55. Advanced Independent Research Laboratory—Preference to sophomores. Second of two-part sequence. For students interested in pursuing research-oriented careers in biological sciences. Project lab course using a modern research laboratory with cutting-edge technologies introduced in 54 to investigate gene and protein function on a genomic level to understand how cells work. Students design and execute original research projects using the yeast *Saccharomyces cerevisiae* to explore fundamental questions in eukaryotic cell biology. Limited enrollment. Prerequisite: 54, consent of instructors. 54,55 substitutes for 44X,Y to fulfill Biological Sciences major lab requirement. GER:2a,WIM

5 units, Spr (*Cyert, Stearns, Ballew*)

BIOSCI 96A,B. Jasper Ridge Docent Training—Multidisciplinary environmental education class with hands-on exposure to field research. Ecology and the natural history of plants and animals, ecology, archaeology, geology, land management, and active research projects of the preserve are presented by experts and staff. Two quarter preparation for Stanford and community students to join the Jasper Ridge education program. Participants lead research-focused educational tours as docents and participate in continuing education classes available to members of the JRBP community after the course.

2 units, A: Win (*Vitousek*), B: Spr (*Staff*)

HOPKINS MARINE STATION

For courses offered at the Hopkins Marine Station, see the "Hopkins Marine Station" section of this bulletin which follows immediately after this section. Several of the Hopkins Marine Station courses can be used to fulfill department menu requirements.

INTERMEDIATE UNDERGRADUATE AND GRADUATE

BIOSCI 101. Ecology—Introduction to the principles of ecology. Topics: interactions of organisms with their environment, dynamics of populations, species interactions, structure and dynamics of ecological communities, biodiversity. Prerequisites: 43 or 51, or consent of instructor. Recommended: Statistics. GER:2a

3 units, Aut (Bohannan, Vitousek)

BIOSCI 102. Demography: Health, Development, Environment—(Same as HUMBIO 137.) Demographic methods and their application to understanding and projecting changes in human infant, child, and adult mortality and health, fertility, population, sex ratios, and demographic transitions. Progress in human development, capabilities, and freedoms. Relationships between population and environment. Prerequisites: numeracy and basic statistics. GER:2a

3 units, Aut (Tuljapurkar)

BIOSCI 103. Seminar in Biological Sciences—Primarily for undergraduates interested in careers in research. Held in conjunction with the Biological Sciences seminar series in which visiting scientists present their work. Students meet prior to the seminar to discuss the upcoming speaker's work. GER:2a

3 units, Aut (Stearns, Ballew)

BIOSCI 104/200. Advanced Molecular Biology—(Graduate students register for 200.) Molecular mechanisms that govern the replication, recombination, and expression of eukaryotic genomes. Topics: DNA replication, DNA recombination, gene transcription, RNA splicing, regulation of gene expression, protein synthesis, and protein folding. Prerequisite: Biological Sciences core. GER:2a

4 units, Win (Fang, Frydman)

BIOSCI 109/209. The Human Genome and Disease: Simple Organisms as Model Systems, for Mice and Men—(Graduate students register for 209; same as HUMBIO 114.) The variability of the human genome and the role of genomic information in research, drug discovery, and human health. Overview of the concepts and interpretations of genomic markers in medical research and real life applications. Human genomes in diverse populations. Original contributions from thought leaders in academia and industry and direct interaction between students and guest lecturers. GER:2a

3 units, Spr (R. Heller)

BIOSCI 110. Vertebrate Biology—(Enroll in HUMBIO 110.)

3-4 units (Porzig) alternate years, not given 2005-06

BIOSCI 112/212. Human Physiology—(Graduate students register for 212.) The functioning of organ systems, emphasizing mechanisms of control and regulation. Topics: structure and function of endocrine and central nervous systems, cardiovascular physiology, respiration, salt and water balance, exercise, and gastrointestinal physiology. Prerequisite: Biological Sciences or Human Biology core. GER:2a

4 units (C. Heller, Garza) alternate years, given 2005-06

BIOSCI 114. Field Course on Tropical Biogeochemistry: Amazon as Case Study—(Same as EARTHSYS 114.) Post-field seminar for students who went on the two-week field trip to the Amazon in September with Brazilian students under Professor Martinelli of the University of São Paulo and Stanford Latin American Studies. Land use changes over the last 30 years including the conversion of natural forest for cattle ranching and soy beans in the Amazon, the largest continuous area of tropical forests on Earth with the greatest number of plant and animal species. In English. GER:2a

3 units, Aut (Vitousek)

BIOSCI 117. Biology and Global Change—(Same as EARTHSYS 111.) The biological causes and consequences of anthropogenic and natural changes in the atmosphere, oceans, and terrestrial and freshwater ecosystems. Topics: glacial cycles and marine circulation, greenhouse gases and climate change, tropical deforestation and species extinctions,

and human population growth and resource use. Prerequisite: Biological Sciences or Human Biology core or graduate standing. GER:2a

3 units, Win (Mooney, Vitousek)

BIOSCI 118/218. Genetic Analysis of Biological Processes—(Graduate students register for 218.) Basic genetic principles and their experimental applications. Emphasis is on the identification and use of mutations to study cellular function. Prerequisite: Biology core. GER:2a

5 units, Aut (Baker)

BIOSCI 120. General Botany—Introduction to plant development, structure, and function in an ecological and evolutionary context. Themes include comparative morphology, systematics and diversity, and broad-scale evolutionary trends. Prerequisites: Biology or Human Biology core or consent of instructor. GER:2a

3-5 units, Win (Preston)

BIOSCI 121. Biogeography—Global distributions of organisms through the Phanerozoic, with emphasis on historical causes. Topics: plate tectonics, island biogeography, climatic change, dispersal, vicariance, ecology of invasions, extinction, gradients, diversity. GER:2a

3 units (Hadly) alternate years, given 2005-06

BIOSCI 123. Restoration Ecology—The science and practice of ecological restoration in historical, legal, and ethical contexts. What does it mean to restore an ecosystem, and when is it finished? Topics: environmental ethics; biodiversity, ecosystem functioning, and services as restoration goals; obstacles to restoration; case studies. Emphasis is on evaluation of restoration outcomes. Required fieldwork. Prerequisites: 43 and an upper-division ecology course, or consent of instructor.

5 units, Aut (Matzek)

BIOSCI 124/224. Plant Physiological Ecology: From Leaf to Globe—(Graduate students register for 224.) A functional approach to understanding terrestrial vegetation. Prerequisites: 42, 43; or consent of instructor. GER:2a

4 units (Berry, Field, Mooney) not given 2004-05

BIOSCI 125. Ecosystems of California—Distribution, functioning, human utilization, and management through time. Prerequisite: 51, HUMBIO 2A, or EARTHSYS 10. GER:2a

3-4 units, Spr (Mooney)

BIOSCI 126/226. Cell Biology: Intracellular Trafficking and Organelle Biogenesis—(Graduate students register for 226.) Organelle biogenesis and intracellular trafficking. Topics include composition and permeability of biological membranes, nucleocytoplasmic transport, the nucleoplasm, the secretory pathway, the endocytic pathway, and signal transduction across the plasma membrane. Emphasis is on the molecular mechanisms underlying cellular processes, and the experimental strategies and methods used to uncover them. GER:2a

4 units (Rexach) not given 2004-05

BIOSCI 127/220. Ecology of Microorganisms—(Graduate students register for 220.) Interactions between microorganisms and their environments from an ecological and evolutionary perspective. Topics: nutrient acquisition and environmental sensing, behavioral ecology, growth of cells and populations, population interactions, communities, and microbial biodiversity. Prerequisite: Biological Sciences core or equivalent, or consent of instructor. Recommended: 133, 142. GER:2a

3 units, Win (Bohannan)

BIOSCI 129A. Cellular Dynamics I: Cell Motility and Adhesion—Cell motility, emphasizing role of actin assembly and dynamics coupling actin organization to cell movement. Interaction of cells with extracellular matrix, and remodelling of extracellular matrix in development and disease. Directed cell migration by chemotaxis (neuronal path-finding, immune cells). Cell-cell adhesion, formation of intercellular junctions and mechanisms regulating cell-cell interactions in development and diseases. Emphasis is on experimental logic, methods, problem solving, and interpretation of results. Students present research papers. Prerequisite: Biological Sciences core. GER:2a

4 units, Win (Nelson)

BIOSCI 129B. Cellular Dynamics II: Building a Cell—Principles of cell organization; how common biochemical pathways are modified to generate diversity in cell structure and function. Roles of actin and microtubule cytoskeletons in cellular architecture. Mechanisms of protein sorting and trafficking, and protein modules and switches in regulating cell polarity. Yeast to polarized epithelial cells and neurons. Emphasis is on experimental logic, methods, problem solving, and interpretation of results. Students present research papers. Prerequisite: Biological Sciences core. Recommended: 129A. GER:2a

4 units, Spr (Nelson)

BIOSCI 132/232. Advanced Imaging Lab in Biophysics—(Graduate students register for 232; same as BIOPHYS 232, MCP 232.) Laboratory and lectures. Microscopy, emphasizing hands-on experience with a range of apparatus and techniques. Topics include microscope optics, Koehler illumination, contrast-generating mechanisms (bright/dark field, fluorescence, phase contrast, differential interference contrast), and resolution limits. Advanced topics vary by year, but include single-molecule fluorescence, fluorescence resonance energy transfer, confocal microscopy, two-photon microscopy, optical trapping, and fiberoptic methods. Limited enrollment. Recommended: basic physics, Biological Sciences core or equivalent, or consent of instructor. GER:2a

4 units, Spr (S. Block, Schnitzer, S. Smith, Stearns)

BIOSCI 133. Genetics of Prokaryotes—Genetic approaches for understanding cellular processes in bacteria, including metabolism, adaptive and stress responses, signal transduction, gene expression, genetic exchange and recombination, chromosome dynamics and evolution, cell division, motility, surface attachment, and developmental responses. Emphasis is on the power of effectively combining genetics with biochemistry, microscopy, and genomics. Prerequisite: Biological Sciences core. GER:2a

4 units, Aut (Burkholder, Campbell)

BIOSCI 134. Replication of DNA—Seminar. Modes of DNA replication and their control in prokaryotes and eukaryotes. Structures, properties, and functions of DNA polymerases and associated factors. Emphasis on experimental approaches and their limitations. Current research literature. Opportunity to lead discussion on topic chosen in consultation with instructors. Enrollment limited to 26 advanced undergraduates. Prerequisites: Biological Sciences core. Recommended: 118. GER:2a

3 units, Win (Burkholder, Hanawalt)

BIOSCI 135. Biological Clocks—The biological basis for endogenous timekeeping in organisms from flies to human beings. How biological clocks are constructed at the molecular, tissue, and behavioral levels and how they keep animals synchronized to their environment. Models and mechanisms of circadian rhythms, molecular oscillators, and hibernation; human applications. Enrollment limited to 35. Prerequisites: Biological Sciences or Human Biology core, or consent of instructor. GER:2a

3 units, Spr (C. Heller, Ruby)

BIOSCI 136. Evolutionary Paleobiology—A paleontological approach to evolutionary theory. Topics: history of life, speciation, heterochrony, evolutionary constraint, coevolution, macroevolution, the Cambrian Explosion, mass extinctions, taphonomy, life on land, life in the sea, life in the air. GER:2a

4 units (Hadly) not given 2004-05

BIOSCI 137/237. Plant Genetics—(Graduate students register for 237.) Gene analysis, mutagenesis, and transposable elements; developmental genetics of flowering and embryo development; biochemical genetics of plant metabolism; lessons from transgenic plant studies. Prerequisites: Biological Sciences core or consent of the instructor. GER:2a

3 units (Walbot, Barton) alternate years, given 2005-06

BIOSCI 139. Biology of Birds—The ways birds interact with their environments and each other, emphasizing studies that had impact in the fields of population biology, community ecology, and evolution. Students become familiar with local bird communities; emphasis is on field

research. One one-hour lecture and one three to five hour lecture or field trip per week. Enrollment limited to 20. Prerequisites: 43 or 51 or equivalent, and consent of instructor. Recommended: birding experience. GER:2a

3 units (Root) alternate years, given 2005-06

BIOSCI 140. Population Biology of Butterflies—Field work on *Euphydryas* populations now under study on campus and elsewhere in California. This course is offered as participation in research when conditions permit; decisions not made until Winter Quarter. Prerequisites: 43 or 51, and consent of instructor.

2-5 units, Spr (Ehrlich)

BIOSCI 141. Biostatistics—(Same as STATS 141.) Introduction to the statistical analysis of biological data. Topics: discrete and continuous distributions, testing hypotheses and confidence procedures, fixed and random effects analysis of variance, regression, and correlation. Wilcoxon and other nonparametric procedures, inference on contingency tables and other data arising from counts. Tests of goodness of fit. Emphasis is on finding numerical solutions to biostatistical problems, and practical interpretations and their implications. GER:2c

4-5 units, Aut (Holmes), Win (Feldman)

BIOSCI 142. Topics in Theoretical Ecology—Introductory. Issues include foraging theory, demography and life history theory, population dynamics and species interactions including ecosystem stability, ecological economics and marine reserve design, evolutionary theory, evolutionary ecology, and evolution of gender sexuality and family structure. Prerequisites: 43 or 101, calculus, and computer programming. Recommended: linear algebra and differential equations. GER:2a

3 units (Roughgarden) alternate years, given 2005-06

BIOSCI 143/243. Evolution—(Graduate students register for 243.) The basic facts and principles of the evolution of all life. The logic of and evidence for the correctness of Darwin's argument for evolution by natural selection. How Mendelian genetics was integrated into evolutionary thinking. The integration of physiological and ecological perspectives into the study of evolutionary adaptation within species. Species formation and evolutionary divergence among species. Patterns of evolution over long time scales. GER:2a

3 units, Win (Watt)

BIOSCI 144. Conservation Biology—(Same as HUMBIO 119.) The principles and application of the science of preserving biological diversity. Topics: sources of endangerment of diversity; the Endangered Species Act; conservation concepts and techniques at the population, community, and landscape levels; reserve design and management; conflict mediation. Case studies and local field trips. 4 units for students taking recommended field trips. Prerequisites: BIOSCI 101, or HUMBIO 2A with consent of instructor. GER:2a

3-4 units, Win (Boggs, Launer)

BIOSCI 145/245. Behavioral Ecology—(Graduate students register for 245.) Animal behavior from an evolutionary and ecological perspective. Topics: foraging, territoriality, reproductive behavior, social groups. Lecture/seminar format; seminars include discussion of journal articles. Independent research projects. Prerequisites: Biological Sciences or Human Biology core, or consent of instructor. Recommended: statistics. GER:2a, WIM

4 units, Spr (Gordon)

BIOSCI 146. Population Studies—Series of talks by distinguished speakers introducing approaches to population and resource studies.

1 unit, Win (Feldman)

BIOSCI 147/247. Controlling Climate Change in the 21st Century—(Graduate students register for 247; same as EARTHSYS 147/247.) The science, economics, and environmental diplomacy of global climate change. Topics: the science of climate change, climate change and global environmental law; global economic approaches to carbon abatement, taxes, and tradable permits; joint implementation, consensus, and division in the EU; gaining the support of China, other developing countries,

and U.S. corporations; alternative energy and energy efficiencies for less carbon-intensive electric power and transport. GER:2a

3 units, Win (*Schneider, Rosencranz*)
alternate years, not given 2005-06

BIOSCI 148/248. Biosystematics and Evolution—(Graduate students register for 248.) Panel discussion and outside speakers cover topics of current interest in the systematics and evolution of living diversity; sponsored jointly with the California Academy of Sciences.

1 unit (*Watt*) alternate years, given 2005-06

BIOSCI 149/249. Principles of Sleep Research—(Graduate students register for 249.) Preference to seniors and graduate students. The neurochemistry and neurophysiology of changes in brain activity and conscious awareness associated with changes in the sleep/wake state. Behavioral and neurobiological phenomena including sleep regulation, sleep homeostasis, circadian rhythms, sleep disorders, sleep function, and the molecular biology of sleep. Enrollment limited to 16. GER:2a

4 units (*Franken, C. Heller*) alternate years, given 2005-06

BIOSCI 150/250. Human Behavioral Biology—(Graduate students register for 250.) The biological basis of normal and abnormal human behavior is examined to train students in approaching complex behaviors in a multidisciplinary way. Relevant disparate disciplines (sociobiology, ethology, neuroscience, and endocrinology) are integrated in the examination of behaviors such as aggression, sexual behavior, language use, mental illness. GER:2a

3-6 units (*Sapolsky*) alternate years, given 2005-06

BIOSCI 151. Mechanisms of Neuron Death—Open to Biology majors with a strong background in neuroscience. Cell and molecular biology of neuron death during neurological disease. Topics: the amyloid diseases (Alzheimer's), prion diseases (kuru and Creutzfeldt-Jakob), oxygen radical diseases (Parkinson's and ALS), triplet repeat diseases (Huntington's), and AIDS-related dementia. Student presentations. Enrollment limited to 15. GER:2a

3 units, Aut (*Sapolsky*)

BIOSCI 152. Imaging: Biological Light Microscopy—(Same as MCP 222.) Survey of instruments which use light and other radiation for analysis of cells in biological and medical research. Topics: basic light microscopy through confocal fluorescence and video/digital image processing. Lectures on physical principles; involves partial assembly and extensive use of lab instruments. Lab. Prerequisites: some college physics, Biological Sciences core. GER:2a

3 units, Spr (*S. Smith*)

BIOSCI 153. Cellular Neuroscience: Cell Signaling and Behavior—(Enroll in PSYCH 120.)

4 units (*Wine*) not given 2004-05

BIOSCI 154/254. Molecular and Cellular Neurobiology—(Graduate students register for 254; same as NBIO 254.) For advanced undergraduates and graduate students. Focus is on cellular and molecular mechanisms in the organization and functions of the nervous system. Topics: wiring of the neuronal network, synapse structure and synaptic transmission, signal transduction in the nervous system, sensory systems, molecular basis of behavior including learning and memory, molecular pathogenesis of neurological diseases. Prerequisite for undergraduates: Biological Sciences core or equivalent, or consent of instructors. GER:2a

4 units, Aut (*Luo, Shen, Clandinin*)

BIOSCI 158. Developmental Neurobiology—For advanced undergraduates and coterminal students. The principles of nervous system development from the molecular control of patterning, cell-cell interactions, and trophic factors to the level of neural systems and the role of experience in influencing brain structure and function. Topics: neural induction and patterning cell lineage, neurogenesis, neuronal migration, axonal pathfinding, synapse elimination, the role of activity, critical periods, and the development of behavior. Prerequisite: 42 or equivalent. GER:2a

4 units, Spr (*McConnell*) alternate years, not given 2005-06

BIOSCI 160. Developmental Biology—The principles of developmental biology. Focus is on the molecular mechanisms underlying the generation of diverse cell types and tissues during embryonic and post-embryonic development in animals. Prerequisite: Biological Sciences core.

4 units, Aut (*Simon, McConnell*) alternate years, not given 2005-06

BIOSCI 162/262. Advanced Microbial Genetics and Genomics—(Graduate students register for 262; same as GENE 262.) Genetic tools for studying the cell biology and behavior of bacteria. Case studies on genetic approaches in combination with biochemistry, microscopy, and genomics to study mechanisms of gene expression, signal transduction, cell cycle regulation, development, and pathogenesis. GER:2a

4 units, Spr (*Tan, Burkholder*)

BIOSCI 163/263. Neural Systems and Behavior—(Graduate students register for 263.) The field of neuroethology and its vertebrate and invertebrate model systems. Research-oriented. Readings include reviews and original papers. How animal brains compare; how neural circuits are adapted to species-typical behavior; and how the sensory worlds of different species represent the world. Prerequisites: 42, HUM-BIO 4A or equivalent. GER:2a

4 units (*Fernald*) alternate years, given 2005-06

BIOSCI 180/280. Fundamentals of Sustainable Agriculture—(Graduate students register for 280; same as EARTHSYS 180/280.) Ecological, economic, and social dimensions of sustainable agriculture in the context of a growing world population. Focus is on management and technological approaches, and historical content of agricultural growth and change, organic agriculture, soil and water resource management, nutrient and pest management, biotechnology, ecosystem services, and climate change. GER:2a

3 units, Spr (*Naylor, Daily*) not given 2005-06

BIOSCI 184/284. Principles and Practice of Biosystematics—(Graduate students register for 284.) The principles and major operating procedures of systematic biology; the classification of organisms and of the relationships among them. Concepts and issues common to the study of all organisms; examples from particular groups of creatures. GER:2a

4 units, Spr (*Watt, Gosliner, Jablonski*)

BIOSCI 187/287. Biochemistry—(Graduate students register for 287; same as CHEMENG 187/287, CHEM 187.) Structure and function of biological molecules, enzyme kinetics and mechanisms, bioenergetics, pathways of intermediary metabolism and their control, and membrane structure and function. Lectures on special topics. Clinical correlations. Prerequisites: organic chemistry, cell biology, or consent of instructor. GER:2a

4-5 units, Win (*Khosla*)

UNDERGRADUATE, INVOLVING INDIVIDUAL WORK

Students majoring in Biological Sciences are encouraged to pursue directed reading and research opportunities. An introduction to research is provided by BIOSCI 2.

BIOSCI 191. Research in Bird Biology—Semi-independent field research in ornithology, emphasizing ecological relationships. Projects involve research, planned and carried out by the student in consultation with the instructor. Results are written in publication format. Enrollment limited. Prerequisites: 43 or 51, concurrent or subsequent enrollment in 139, and consent of instructor. GER:2a

3 units, Win, Spr (*Ehrlich, Root*)

BIOSCI 193. Undergraduate Journal Club—Weekly discussion, led by students and facilitated by faculty, for reading scientific literature and presenting papers. Contact Kristin Black (kblack@stanford.edu) by the fifth week of the previous quarter if requesting a particular research topic. Minimal enrollment required. Prerequisite: Biological Sciences core, consent of instructor. Recommended: 199 or 199X.

1 unit, Aut, Win, Spr (*Black*)

BIOSCI 198. Directed Reading in Biological Sciences

1-15 units, Aut, Win, Spr (Staff)

BIOSCI 198X. Out-of-Department Directed Reading—Individually arranged under the supervision of members of the faculty. Credit for work arranged with out-of-department faculty is restricted to Biological Sciences majors and requires department approval. See <http://biohonors.stanford.edu> for information and petitions, or email kblack@stanford.edu for more information.

1-15 units, Aut, Win, Spr (Staff)

BIOSCI 199. Undergraduate Research with BIOSCI Faculty—Individual research taken by arrangement with in-department instructors. See <http://biohonors.stanford.edu> for information on research sponsors, units, and credit for summer research, or email kblack@stanford.edu.

1-15 units, Aut, Win, Spr (Staff)

BIOSCI 199X. Out-of-Department Undergraduate Research—Individual research by arrangement with out-of-department instructors. Credit for 199X is restricted to declared Biological Sciences majors and requires department approval. For information on sponsors, units, petitions, deadlines, credit for summer research, and out-of-Stanford research, see <http://biohonors.stanford.edu> or email kblack@stanford.edu.

1-15 units, Aut, Win, Spr (Staff)

ADVANCED UNDERGRADUATE AND GRADUATE

BIOSCI 200. Advanced Molecular Biology—Molecular mechanisms that govern the replication, recombination, and expression of eukaryotic genomes. Topics: DNA replication, DNA recombination, gene transcription, RNA splicing, regulation of gene expression, protein synthesis, and protein folding. Prerequisite: Biological Sciences core. GER:2a

4 units, Win (Fang, Frydman)

BIOSCI 201. Proteomic Strategies in Cell Biology—For graduate students and advanced undergraduates. Discovery of protein interactions and tests of their physiological significance. Primary literature; student presentations. Prerequisites: advanced cell biology course such as 214, 126/226, or 129, or advanced molecular biology or biochemistry course such as 104/200 or 134.

2 units (Rexach) not given 2004-05

BIOSCI 203. Advanced Genetics—(Same as GENE 203, DBIO 203.) For graduate students in biological sciences; may be appropriate for graduate students in other programs. The genetic toolbox. Examples of analytic methods, genetic manipulation, genome analysis, and human genetics. Emphasis is on use of genetic tools in dissecting complex biological pathways, developmental processes, and regulatory systems. Faculty-led discussions sections with critical evaluation of papers. Students with minimal prior experience in genetics should prepare themselves by working out problems in college level textbooks.

4 units, Aut (Stearns, Kim, Sidow, Barsh)

BIOSCI 205. DNA Repair and Genomic Stability—Interactions of endogenous and environmental mutagens with cellular DNA. Cellular responses to damaged DNA including molecular mechanisms for DNA repair, translesion DNA synthesis, and recombinational pathways. Inducible repair responses and error-prone mechanisms. Human hereditary diseases that predispose to cancer. Relationships of DNA repair to mutagenesis and carcinogenesis. Current research literature. Prerequisites: 41 or 52, and 118, or consent of instructor.

3 units, Spr (Ford, Hanawalt)

BIOSCI 206. Field Studies in Earth Systems—(Same as EARTHSYS 189.) For advanced undergraduates and graduate students. Field-based, focusing on the components and processes by which terrestrial ecosystems function. Topics from biology, chemistry, ecology, geology, and soil science. Standard field techniques, experimental design, data analysis, and written and oral presentation. Small team projects test questions in the functioning of natural ecosystems. Admission by application; see *Time Schedule*. Prerequisites: BIOSCI 141 or GES 160, or equivalent. GER:2a

5 units, Spr (Chiariello, Fendorf, Matson, Miller)

BIOSCI 207. Life and Death of Proteins—How proteins are made and degraded in the cell. Discussion of primary literature. Case studies follow the evolution of scientific ideas, and evaluate how different experimental approaches contribute to our understanding of a biological problem. Topics: protein folding and assembly, mechanisms of chaperone action, sorting into organelles and the ubiquitin-proteasome pathway. Enrollment limited to 20.

3 units, Spr (Frydman) alternate years, not given 2005-06

BIOSCI 208. Developmental Biology—(Enroll in DBIO 210.)

5 units, Spr (Talbot, Nusse, Crabtree, Fuller, Kim, Kingsley, Scott)

BIOSCI 209. The Human Genome and Disease: Simple Organisms as Model Systems, for Mice and Men—(Same as BIOSCI 109, HUMBIO 114.) The variability of the human genome and the role of genomic information in research, drug discovery, and human health. Overview of the concepts and interpretations of genomic markers in medical research and real life applications. Human genomes in diverse populations. Original contributions from thought leaders in academia and industry and direct interaction between students and guest lecturers. GER:2a

3 units, Spr (R. Heller)

BIOSCI 211. Biophysics of Sensory Transduction—Neural and aneural mechanisms that organisms have evolved to detect physical cues from the environment. Sensory topics: vision, hearing, taste, olfaction, chemoreception, mechanoreception, electromagnetic sensing, and other modalities. Emphasis is on common and/or emergent biophysical themes, such as sensitivity, amplification, encoding, adaptation, and the molecular basis of cellular signaling. Interdisciplinary aspects of biology and physics. Student presentations. Prerequisites: undergraduate physics, calculus, and basic biology.

4 units (S. Block) not given 2004-05

BIOSCI 213. Biology of Viruses—Principles of virus growth, genetics, architecture, and assembly. The relation of temperate viruses and other episomes to the host cell. Prerequisite: Biological Sciences core. Recommended: 118.

3 units, Win (Campbell)

BIOSCI 214. Cell Biology of Physiological Processes—(Same as MCP 221.) The mechanisms of membrane and cellular biogenesis in relation to physiological processes. Emphasis is on regulatory and signaling mechanisms involved in coordinating complex cellular phenomena such as cellular organization, function, and differentiation. Topics: cellular compartmentalization, transport and trafficking of macromolecules, organelle biogenesis, cell division, motility and adhesion, and multicellularity. Prerequisites: Biological Sciences core, BIOSCI 187/287.

2-5 units, Win (Kopito, Frydman, Nelson)

BIOSCI 215. Biochemical Evolution—Biochemical viewpoints on the evolutionary process. Topics: prebiotic biochemistry and the origins of life; adaptive organization of metabolism; enzyme polymorphisms and other biochemical aspects of population genetics; macromolecular phylogeny and protein clocks. Prerequisites: Biological Sciences core or substantial equivalent.

3 units (Watt) not given 2004-05

BIOSCI 216. Terrestrial Biogeochemistry—Nutrient cycling and the regulation of primary and secondary production in terrestrial, freshwater, and marine ecosystems; land-water and biosphere-atmosphere interactions; global element cycles and their regulation; human effects on biogeochemical cycles. Prerequisite: graduate standing in science or engineering; consent of instructor for undergraduates or coterminal students.

3 units, Spr (Vitousek) alternate years, not given 2005-06

BIOSCI 217. Neuronal Biophysics—Biophysical descriptions and mechanisms of passive and excitable membranes, ion channels and pumps, action potential propagation, and synaptic transmission. Dynamics of single neurons and neuronal networks. Emphasis is on the experimental basis for modern research applications. Interdisciplinary aspects of biology and physics. Literature, problem sets, and student presentations. Prerequisites: undergraduate physics, calculus, and biology.

4 units, Aut (Schnitzer)

BIOSCI 220. Ecology of Microorganisms—Interactions between microorganisms and their environments from an ecological and evolutionary perspective. Topics: nutrient acquisition and environmental sensing, behavioral ecology, growth of cells and populations, population interactions, communities, and microbial biodiversity. Prerequisite: Biological Sciences core or equivalent, or consent of instructor. Recommended: 133, 142. GER:2a

3 units, Win (Bohannan)

BIOSCI 221. Methods of Theoretical Population Biology—How problems in population biology are formulated theoretically and how models are analyzed using theoretical and computational numerical methods. Topics include deterministic and stochastic models, structured populations, stability and bifurcations, and data-driven models with applications in ecology and genetics. Prerequisites: advanced calculus, linear algebra, basic probability.

4 units, Aut (Tuljapurkar)

BIOSCI 222. Exploring Neural Circuits—Seminar. The logic of how neural circuits control behavior; how neural circuits are assembled during development and modified by experience. Emphasis is on primary literature is. Topics include: neurons as information processing units; simple and complex circuits underlying sensory information processing and motor control; and development and plasticity of neural circuits. Advanced undergraduates with background in physical science, engineering, and biological science may enroll. Recommended: background in neuroscience. GER:2a

3 units, Win (Luo)

BIOSCI 230. Molecular and Cellular Immunology—For graduate students and advanced undergraduates. The basic components of the immune system: structure and functions of antibody molecules; cellular basis of immunity and its regulation; molecular biology and biochemistry of antigen receptors and signaling pathways; genetic control of immunity and disease susceptibility. Emphasis is on key experimental approaches that have advanced our understanding. Extra unit for discussion section on immunology literature. Prerequisites for undergraduates: Biological Sciences or Human Biology core, or consent of instructor.

4-5 units, Aut (Jones)

BIOSCI 241. Biological Macromolecules—(Enroll in SBIO 241.)

3-5 units, Aut (Puglisi, Block, Herschlag, Kirkegaard, McKay, Pande, Garcia)

BIOSCI 258. Neural Development—For Ph.D. students. Seminar; students also attend BIOSCI 158 lectures. Topics: neural induction and patterning, cell lineage, neurogenesis, neuronal migration, axonal pathfinding, synapse elimination, the role of activity, critical periods, and the development of behavior.

4 units, Spr (McConnell) alternate years, not given 2005-06

BIOSCI 261A,B. Advanced Topics in Behavioral Biology—Seminar. The biological roots of aggression, competition, cooperation, and altruism. Prerequisite: 150/250, and consent of instructor.

3 units, 261A: Aut, 261B: Win (Sapolsky)

BIOSCI 274A. Environmental Microbiology I—(Enroll in CEE 274A.)

3 units, Aut (Spormann), Sum (Staff)

BIOSCI 274B. Environmental Microbiology II—(Enroll in CEE 274B.)

3 units, Win (Spormann)

BIOSCI 274C. Environmental Microbiology Laboratory—(Enroll in CEE 274C.)

3 units, Spr (Spormann)

BIOSCI 283. Theoretical Population Genetics—Models in population genetics. Selection, random drift, gene linkage, migration, and inbreeding, and their influence on the evolution of gene frequencies and chromosome structure. Models are related to DNA sequence evolution. Prerequisite: consent of instructor.

3 units (Feldman) alternate years, given 2005-06

BIOSCI 290. Teaching of Biological Science—Open to upper-division undergraduates and graduate students. Practical experience in teaching lab biology or serving as an assistant in a lecture course. Prerequisite: consent of instructor.

1-5 units, Aut, Win, Spr (Staff)

BIOSCI 290X. Out-of-Department Teaching of Biological Science—Prerequisite: consent of instructor.

1-5 units, Aut, Win, Spr (Staff)

BIOSCI 291. Development and Teaching of Core Experimental Laboratories—Preparation for teaching the core experimental courses (44X and 44Y). Emphasis is on lab, speaking, and writing skills. Focus is on updating the lab to meet the changing technical needs of the students. Must be taken prior to teaching either of the above courses. Prerequisite: selection by instructor.

1-2 units, Aut, Win (Malladi, Yelton)

PRIMARYLY FOR GRADUATE STUDENTS

BIOSCI 300. Graduate Research—For graduate students only. Individual research by arrangement with in-department instructors.

1-15 units, Aut, Win, Spr, Sum (Staff)

BIOSCI 300X. Out-of-Department Graduate Research—Individual research by arrangement with out-of-department instructors. Master's students: credit for work arranged with out-of-department instructors is restricted to Biological Sciences students and requires an approved department petition. See <http://biohonors.stanford.edu> for information on research sponsors, units, petitions, deadlines, credit for summer research, and out-of-Stanford research, or email kblack@stanford.edu for more information.

1-15 units, Aut, Win, Spr, Sum (Staff)

BIOSCI 301. Frontiers in Biology—Current research in molecular, cellular, and developmental biology emphasizing primary research literature. Held in conjunction with the department's Monday seminar series. Students and faculty meet weekly before the seminar for a student presentation and discussion of papers related to the upcoming seminar. Limited to and required for all first-year Ph.D. students interested in molecular, cellular, and developmental biology in the Department of Biological Sciences.

1-3 units, Aut, Win (Burkholder, Mudgett)

BIOSCI 302,303,304. Current Topics and Concepts in Population Biology, Ecology, and Evolution—Required of first-year graduate students in population biology, ecology and evolution, and marine biology; open to all graduate students. Major conceptual issues and developing topics.

1-3 units, 302: Aut, 303: Win, 304: Spr (Staff)

BIOSCI 305. DNA Repair and Genetic Toxicology—Seminar. Literature review and discussion of current research, emphasizing experimental approaches for studying DNA damage processing in bacteria, yeast, and mammalian cells. Enrollment limited to graduate students and advanced undergraduate students doing research in this field. Prerequisite: consent of instructor.

1-3 units, Aut, Win, Spr (Hanawalt)

BIOSCI 306. Current Topics in Integrative Organismal Biology—Limited to graduate students doing research in this field.

1 unit, Aut (B. Block)

BIOSCI 307. Seminar in Microbial Ecology and Evolution—Discussion of recent and classical research papers in microbial ecology and evolution, and presentation of research in progress by participants. Prerequisite: consent of instructor.

1 unit, Aut, Win, Spr (Bohannan)

BIOSCI 312. Ethical Issues in Ecology and Evolutionary Biology—Focus is on ethical issues addressed in the *Academic Duty* and others of importance to academics and scientists in the fields of ecology, behavior, and evolutionary biology. Discussions led by faculty and outside guests.

Satisfies ethics course requirement for ecology and evolutionary biology. Prerequisite: graduate standing in the ecology and evolutionary biology or marine program, or consent of instructor.

1 unit, Aut (Ehrlich)

BIOSCI 315. Seminar in Biochemical Evolution—Literature review and discussion of current topics in biochemical evolution and molecular evolutionary genetics. Prerequisite: consent of instructor.

1-3 units (Watt)

BIOSCI 342. Plant Biology Seminar—Topics announced at the beginning of each quarter. In-depth coverage of the current literature.

1-15 units, Aut, Win, Spr, Sum (Walbot, Long, Mudgett, C. Somerville, S. Somerville, Barton, Berry, Frommer, Grossman, Wang)

BIOSCI 344. Advanced Seminar in Cellular Biology—Enrollment limited to graduate students directly associated with departmental research groups working in cell biology.

1-3 units, Aut, Win, Spr (Burkholder, Cyert, Fang, Frydman, Kopito, Rexach, Stearns)

BIOSCI 346. Advanced Seminar in Molecular Biology—Enrollment limited to graduate students directly associated with departmental research groups in genetics or molecular biology.

1-3 units, Aut, Win, Spr (Long, Campbell, Spormann, Grossman, Burkholder, Yanofsky)

BIOSCI 358. Advanced Topics in Biological Sciences

1-3 units, Aut, Win, Spr (B. Baker, Fernald, Luo, McConnell, Shen)

BIOSCI 383. Seminar in Population Genetics—Literature review and research discussion of current problems in the theory and practice of population genetics and molecular evolution. Student participation required. Prerequisite: consent of instructor.

1-3 units, Aut, Win, Spr (M. Feldman)

BIOSCI 384. Theoretical Ecology—(Same as GEOPHYS 185Y/385Y.) Recent and classical research papers in ecology, and presentation of work in progress by participants. Prerequisite: consent of instructor.

1-2 units, Aut, Win, Spr (Roughgarden)

BIOSCI 385. Speaking About Science—Communication about science occurs in settings such as presenting scientific work to an audience of peers, communicating difficult concepts in a classroom, or describing a new finding to a reporter. Focus is on practice in speaking about science, emphasizing strategies for making difficult ideas easy to understand and integrating visual aids into oral presentations. Limited to Ph.D. students.

2-4 units, Spr (McConnell) alternate years, given 2005-06

BIOSCI 388. Communication and Leadership Skills—(Same as IPER 210.) Focus is on delivering information to policy makers and the lay public. How to speak to the media, congress, and the general public; how to write op-eds and articles; how to package ideas including titles, abstracts, and CVs; how to survive peer review, the promotion process, and give a job talk; and how to be a responsible science advocate.

2 units (Root) alternate years, given 2005-06

BIOSCI 450. Introduction to Biotechnology—(Enroll in CHEMENG 450, BIOC 450.)

3 units, Spr (Staff)

BIOSCI 459. Frontiers in Interdisciplinary Biosciences—(Crosslisted in departments in the schools of H&S, Engineering, and Medicine; student register through their affiliated departments; otherwise register for CHEMENG 459) See CHEMENG 459 or http://biox.stanford.edu/courses/459_announce.html

1 unit, Aut, Win, Spr (Robertson)

OVERSEAS STUDIES

These courses are approved for the Biological Sciences major and taught overseas at the campus indicated. Students should discuss with their major advisers which courses would best meet individual needs.

Descriptions are in the “Overseas Studies” section of this bulletin, or at the Overseas Studies Office, 126 Sweet Hall.

AUSTRALIA

BIOSCI 109Z. Coral Reef Ecosystems—(Same as EARTHSYS 120X, HUMBIO 61X.) Only 2 units may count toward the BIOSCI Major.

3 units, Aut (Arrigo, Dove, Hoegh-Guldberg)

BIOSCI 110Z. Coastal Resource Management—(Same as EARTHSYS 121X, HUMBIO 62X.) Only 2 units may count toward the BIOSCI major.

3 units, Aut (Johnstone, Udy)

BIOSCI 111Z. Coastal Forest Ecosystems—(Same as EARTHSYS 122X, HUMBIO 63X.) Only 2 units may count toward the BIOSCI major.

3 units, Aut (Duke, Pole)

DIVISION OF MARINE BIOLOGY HOPKINS MARINE STATION

Emeriti: (Professor) John H. Phillips, Jr.

Director: George N. Somero

Professors: Barbara A. Block, Mark W. Denny, David Epel, William F. Gilly, Stephen R. Palumbi, George N. Somero, Stuart H. Thompson

Assistant Professor: Fiorenza Micheli

Lecturer: James Watanabe

Station Offices: Oceanview Blvd., Pacific Grove, CA 93950

Phone: (831) 655-6200

Email: information@marine.stanford.edu

Web Site: <http://hopkins.stanford.edu>

Courses given in Marine Biology at the Hopkins Marine Station have the subject code BIOHOPK. For a complete list of subject codes, see Appendix.

The Hopkins Marine Station is at Pacific Grove, on the south side of Monterey Bay, 90 miles from the main University campus. The 11-acre grounds, on the main portion of Cabrillo Point, include a sheltered landing place and storage for small boats. Buildings include the Lawrence Blinks Laboratory, Alexander Agassiz Laboratory, Jacques Loeb Laboratory, Harold A. Miller Library, Monterey Boat Works, Walter K. Fisher Laboratory, Tuna Research and Conservation Center, and De Nault Family Research Building. The 15,000 volume library subscribes to approximately 450 journals, and its collections are particularly strong in embryology, marine biology, microbiology, and oceanography.

The station is open during the entire year and maintains a permanent staff of resident investigators and technical assistants. There are facilities for visiting investigators and for elementary and advanced instruction in biology. For further information, write Hopkins Marine Station, Pacific Grove, CA 93950.

COURSES

BIOHOPK 43. Plant Biology, Evolution, and Ecology—Introduction to biology in a marine context. Principles of plant biology: physiology, structure, diversity. Principles of evolution: macro and microevolution, population genetics. Ecology: the principles governing the distribution and abundance of organisms; population, community, and ecosystem ecology. Equivalent to BIOSCI 43. GER:2a

5 units, Spr (Denny, Palumbi, Watanabe)

BIOHOPK 44Y. Core Experimental Laboratory—Laboratory and field projects provide working familiarity with the concepts, organisms, and techniques of plant and evolutionary biology, and ecology. Emphasis is on hands-on experimentation in the marine environment, analysis of data, and written and oral presentation of the experiments. Lab fee. Equivalent to BIOSCI 44Y. Corequisite: BIOHOPK 43. GER:2a, WIM

5 units, Spr (Denny, Palumbi, Watanabe)

BIOHOPK 56H. History and Philosophy of Science—The nature of scientific inquiry, its logic, historical patterns, and sociology. Emphasis is on the unique aspects of the biological sciences.

2 units (Somero) not given 2004-05

BIOHOPK 161H/261H. Invertebrate Zoology—(Graduate students register for 261H.) Survey of invertebrate diversity emphasizing form and function in a phylogenetic framework. Morphological diversity, life histories, physiology, and ecology of the major invertebrate groups, concentrating on local marine forms as examples. Current views on the phylogenetic relationships and evolution of the invertebrates. Lectures, lab, plus field trips. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

5 units, Win (Watanabe)

BIOHOPK 162H/262H. Comparative Animal Physiology—(Graduate students register for 262H.) How animals work. Topics: physiology of respiration, circulation, energy metabolism, thermal regulation, osmotic regulation, muscle physiology, and locomotion. Evolutionary and ecological physiology. Lectures, lab, and field research. An option to combine the course work with a more intensive research focus, with more units, is available. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

5-8 units (Block) alternate years, given 2005-06

BIOHOPK 163H/263H. Oceanic Biology—(Graduate students register for 263H.) How the physics and chemistry of the oceanic environment affect marine plants and animals. Topics: seawater and ocean circulation, separation of light and nutrients in the two-layered ocean, oceanic food webs and trophic interactions, oceanic environments, biogeography, and global change. Lectures, discussion, and field trips. Recommended: PHYSICS 21 or 51, CHEM 31, Biological Sciences core, or consent of instructor. GER:2a

4 units, Win (Denny, Somero)

BIOHOPK 164H/264H. Marine Botany—(Graduate students register for 264H.) Introduction to plants in the sea. Phytoplankton and oceanic productivity; macrophytes and nearshore ecology; marine angiosperms from taxonomical, physiological, and ecological perspectives. Lectures, lab. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

5 units, Win (Staff) alternate years, not given 2005-06

BIOHOPK 165H/265H. Air and Water—(Graduate students register for 265H.) Introduction to environmental physics. The physical properties of life's fluids compared and contrasted. How and why life has evolved differently on land than in water. Topics: density, viscosity, diffusion, thermal properties, sound, light, evaporation, and surface tension. Recommended: PHYSICS 21, 23, or 51, 53; calculus; Biological Sciences core; or consent of instructor. GER:2a, WIM

3 units (Denny) not given 2004-05

BIOHOPK 166H/266H. Molecular Ecology—(Graduate students register for 266H.) How modern technologies in gene sequencing, detection of nuclear nucleotide polymorphisms, and other approaches are used to gather data on genetic variation that allow measurement of population structure, infer demographic histories, inform conservation efforts, and advance understanding of the ecology of diverse types of organisms. GER:2a

5 units, Win (Palumbi)

BIOHOPK 167H/267H. Nerve, Muscle, and Synapse—(Graduate students register for 267H.) Fundamental aspects of membrane excitability, nerve conduction, synaptic transmission, and excitation-contraction coupling. Emphasis is on biophysical, molecular, and cellular level analyses of these processes in vertebrate and invertebrate systems. Labs on intra- and extracellular recording and patch clamp techniques. Lectures, discussions, and labs. Prerequisites: PHYSICS 23, 28, 43, or equivalent; CHEM 31, 135; calculus; or consent of instructor. GER:2a

5 units, Spr (Gilly)

BIOHOPK 168H/268H. Marine Pollution—(Graduate students register for 268H.) Major pollutants in marine organisms; how they are affected and how they cope.

2 units, Spr (Epel)

BIOHOPK 169H/269H. Neurobiology and Behavior—(Graduate students register for 269H.) The neural mechanism responsible for generating animal behavior. Topics: sensory ecology, neuronal excitability, synaptic plasticity, and neural circuits. Lectures, discussions, demonstrations, and lab. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

5 units (Thompson) not given 2004-05

BIOHOPK 170H/270H. Topics in Marine Biology—(Graduate students register for 270H.) A specific topic of current interest to marine science is explored through discussion of the primary literature. Prerequisite: Biological Sciences core or consent of instructor.

1 unit, Win (Staff)

BIOHOPK 171H/271H. Ecological and Evolutionary Physiology—(Graduate students register for 271H.) The interplay between environmental factors (e.g., temperature, light, nutrient supply, salinity, and oxygen availability) and adaptive change at the physiological level. Emphasis is on marine species and the roles played by physiological adaptations in establishing their distribution and performance. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

4 units, Win (Somero)

BIOHOPK 172H/272H. Marine Ecology—(Graduate students register for 272H.) Introduction to the principles of ecology as applied to life in the sea. Population dynamics, community ecology, and the effects of man on the oceans. Lectures, lab. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

5 units, Win (Micheli)

BIOHOPK 173H/273H. Marine Conservation Biology—(Graduate students register for 273H.) The science of preserving marine diversity. Goal is to introduce students to major conservation issues associated with marine ecosystems. Topics include decline of open ocean fisheries, salmon conservation, bycatch issues in fisheries, use of marine reserves, marine invasions, marine pollution, and global warming. Includes five lecturers from other universities who specialize in marine conservation.

1-3 units (Block) alternate years, given 2005-06

BIOHOPK 174H/274H. Experimental Design and Probability—(Graduate students register for 274H.) Variability is an integral part of biology. Introduction to probability and its use in designing experiments to address biological problems. Focus is on analysis of variance, when and how to use it, why it works, and how to interpret the results. Design of complex, but practical, asymmetrical experiments and environmental impact studies, and regression and analysis of covariance. Computer-based data analysis. Prerequisite: Biological Sciences core or consent of instructor. GER:2a

3 units, Spr (Watanabe)

BIOHOPK 175H. Problems in Marine Ecology and Ecophysiology—Field-based, emphasizing individual and small group research for advanced undergraduates. Students learn field and laboratory techniques to address ecological, ecophysiological, and biomechanical problems faced by marine organisms. Original research projects may be integrated with on-going research programs in the Hopkins Marine Life refuge. Prerequisites: Biological Sciences core, consent of instructor. GER:2a, WIM

10 units, Spr (Epel, Micheli, Somero)

BIOHOPK 176H. Experimental Neurobiology—Lab, emphasizing methods in the neurosciences, including electrophysiological, biochemical, molecular, behavioral, and histological techniques. Students work on individual original research projects under guidance of the faculty. Prerequisites: strong interest in neurobiology and previous relevant course work, consent of instructors. GER:2a, WIM

12 units, Spr (Thompson)

BIOHOPK 178H/278H. Deep-Sea Biology—(Graduate students register for 278H.) Seminar. The deep sea is the largest, least understood fraction of the biosphere. Organisms living here possess diverse adaptations to allow life under high pressure. Recent discoveries in deep-sea biology including the biology of the hydrothermal vents, and the technology that makes these advances possible. Prerequisites: Biological Sciences core, consent of instructor.

2 units, Spr (Somero) alternate years, not given 2005-06

BIOHOPK 182H/323H. Stanford at Sea—(Graduate students register for 323H; same as EARTHSYS 323.) Five weeks of marine science including oceanography, marine physiology, maritime studies including literature, conservation, and policy, and nautical science at Hopkins Marine Station. Onshore course work followed by five weeks at sea aboard a 135-foot sailing research vessel in the Pacific Ocean. Shore component comprised of three multidisciplinary courses meeting daily and continuing aboard ship. Students develop an independent research project plan while ashore, and carry out the research at sea. Course given in collaboration with the Sea Education Association of Woods Hole, MA. GER:2a

16 units, Spr (Block, Dunbar, Micheli) alternate years, not given 2005-06

BIOHOPK 183H/283H. Environmental Cell and Developmental Biology—(Graduate students register for 283H.) How external signals alter cell activity and developmental trajectory. Survey of cell and developmental phenomena.

4 units (Epel) not given 2004-05

BIOHOPK 184H. Biological Holism—(Graduate students register for 284H.) The work and writings of Ed Ricketts and John Steinbeck, and their views of holism in relation to contemporary thought discussed with guest scholars. Focus is on their 1940 expedition to the Sea of Cortez. Field trips based on Ricketts's *Between Pacific Tides*. Animal behavior studies in the lab. GER:2a

5 units, Win (Gilly)

BIOHOPK 185H/285H. Writing About Nature and Science—(Graduate students register for 285H.) Readings take a historical approach to the interface of science and nature. Forms of writing include essays, short stories, journalism, travel logs, and scientific reports. Field trips to outdoor sites and laboratories. Coaching by a scientist and a professional writer.

3 units, Win (Gilly)

BIOHOPK 198H. Directed Instruction or Reading—May be taken as a prelude to research and may also involve participation in a lab or research group seminar and/or library research. Credit for work arranged with out-of-department instructors restricted to Biological Sciences majors and requires department approval.

1-15 units, Aut, Win, Spr, Sum (Staff)

BIOHOPK 199H. Undergraduate Research—For experience in biological research, qualified undergraduate students may undertake individual work in the fields listed under 300H. Arrangements must be made by consultation or correspondence.

1-15 units, Aut, Win, Spr, Sum (Staff)

BIOHOPK 290H. Teaching of Biological Science—Open to upper-division undergraduates and graduate students. Practical experience in teaching lab biology or serving as an assistant in a lecture course. Prerequisite: consent of instructor.

1-15 units (Staff)

BIOHOPK 300H. Research—Graduate study involving original work may be undertaken with members of the staff in the fields indicated:

B. Block: Comparative Vertebrate Physiology—biomechanics, metabolic physiology and phylogeny of pelagic fishes, evolution of endothermy.
M. Denny: Biomechanics—the mechanical properties of biological materials and their consequences for animal size, shape, and performance.

D. Epel: Developmental Biology—physiology and regulation of early embryonic development. Embryonic adaptation to environmental stress.

W. Gilly: Neurobiology—analysis of giant axon systems in marine invertebrates from molecular to behavioral levels.

F. Micheli: Marine Ecology—species interactions and community ecology, scale-dependent aspects of community organization, marine conservation and design of multi-species marine protected areas, behavioral ecology.

S. Palumbi: Molecular Evolution—mechanisms of speciation, genetic differentiations of populations, use of molecular tools in conservation biology, design of marine protected areas.

G. Somero: Ecological and Evolutionary Physiology—adaptations of marine organisms to the environment: temperature, pressure, desiccation, and oxygen availability.

S. Thompson: Neurobiology—neuronal control of behavior and mechanisms of ion permeation, signal transduction, calcium homeostasis, and neurotransmission.

J. Watanabe: Marine Ecology—kelp forest ecology and invertebrate zoology.

SUMMER PROGRAM

The summer program is open to all advanced undergraduate, graduate, and postdoctoral students, and to teachers whose biological backgrounds, teaching, or research activities can benefit from a summer's study of marine life. Application blanks and further information may be obtained by writing to Hopkins Marine Station, Pacific Grove, CA 93950. Completed applications should be submitted by April 15. Applications received later are considered if space is still available.

The Summer Quarter is divided into two terms. It is possible to register for either term, or for the full quarter. Registration is possible for only one course during each term.

FIRST TERM

BIOHOPK 179H. Subtidal Communities—Lectures, lab, and field trips treating shallow water marine communities. Emphasis is on local habitats and the introduction of physical environmental parameters, community composition, aspects of the biology of constituent species, and methods for subtidal studies. Prerequisites: scuba certification, scuba equipment, ocean diving experience, and some background in biology. GER:2a

6 units, Sum (Watanabe)

BIOHOPK 277H. Biomechanics and Ecological Physiology of Intertidal Communities—Introduction to the mechanical and physiological design of wave-swept organisms. How different abiotic stresses (wave exposure, wind speed, temperature, light) influence marine animals and plants, and adaptive responses to these stresses. Lab introduces methods for measuring environmental stress and organismal responses. Recommended: background in algology, intertidal ecology, or invertebrate zoology; basic physics and calculus.

4 units, Sum (Denny, Palumbi, Somero) alternate years, not given 2005-06

SECOND TERM

BIOHOPK 180H/280H. Problems in Subtidal Ecology—(Graduate students register for 280H.) Group and individual research projects focus on shallow water marine communities. Daily lectures, SCUBA dives, labs. Prerequisites: SCUBA certification; advanced or comparable experience, or 179H. GER:2a

6 units, Sum (Watanabe) alternate years, not given 2005-06

BIOHOPK 181H/281H. Problems in Conservation Biology and Ecology of Rocky Shores—(Graduate students register for 281H.) Field and lab course in which students learn fundamentals of field research in the intertidal zone and assist in on-going assessment of human impacts on rocky shores. Opportunities for individual and small group research available. GER:2a

6 units (Micheli, Watanabe) alternate years, given 2005-06

BIOPHYSICS PROGRAM

Emeritus: Harden M. McConnell (Chemistry)

Director: William I. Weis

Professors: Richard W. Aldrich (Molecular and Cellular Physiology), Steve Block (Applied Physics), Steven Boxer (Chemistry), Axel Brunger (Molecular and Cellular Physiology), Douglas Brutlag (Biochemistry), Gilbert Chu (Oncology), Steven Chu (Physics, Applied Physics), Mark Davis (Microbiology and Immunology), Sebastian Doniach (Physics, Applied Physics), James Ferrell (Molecular Pharmacology), Philip C. Hanawalt (Biological Sciences), Daniel Herschlag (Biochemistry), Keith O. Hodgson (Chemistry), Wray H. Huestis (Chemistry), Chaitan Khosla (Chemical Engineering, Chemistry), Eric Kool (Chemistry), Ron Kopito (Biological Sciences), Roger D. Kornberg (Structural Biology), Michael Levitt (Structural Biology), David B. McKay (Structural Biology), Uel J. McMahan (Neurobiology), W. E. Moerner (Chemistry), Norbert Pelc (Bioengineering, Radiology), Edward I. Solomon (Chemistry), James A. Spudich (Biochemistry, Developmental Biology), James Swartz (Bioengineering, Chemical Engineering), William I. Weis (Structural Biology), Helmut Wiedemann (SSRL, Applied Physics)

Associate Professors: Russ Altman (Bioengineering, General Medicine, Medical Informatics), Judith Frydman (Biological Sciences), Peter Jackson (Pathology), Tobias Meyer (Molecular Pharmacology), Jody Puglisi (Structural Biology)

Assistant Professors: K. Christopher Garcia (Microbiology and Immunology), Miriam Goodman (Molecular and Cellular Physiology), Pehr Harbury (Biochemistry), Merritt Maduke (Molecular and Cellular Physiology), Vijay Pande (Chemistry), Jianghong Rao (Radiology), Mark Schnitzer (Biological Sciences, Applied Physics), Julie Theriot (Biochemistry)

Program Offices: Fairchild Building D118

Mail Code: 94305-5126

Phone: (650) 723-7576

Email: biophysics@med.stanford.edu

Web Site: <http://www.stanford.edu/dept/biophysics>

Courses given in Biophysics have the subject code BIOPHYS. For a complete list of subject codes, see Appendix.

The Biophysics Program offers instruction and research opportunities leading to the Ph.D. in Biophysics. Students admitted to the program may perform their graduate research in any appropriate department.

GRADUATE PROGRAM

For information on the University's basic requirements for the Ph.D. degree, see the "Graduate Degrees" section of this bulletin.

A small number of highly qualified applicants are admitted to the program each year. Applicants should present strong undergraduate backgrounds in the physical sciences and mathematics. The graduate course program, beyond the stated requirements, is worked out for each student individually with the help of appropriate advisers from the Committee on Biophysics. The requirements and recommendations for the Ph.D. degree include:

1. Training in physics or chemistry equivalent to that of an undergraduate physics or chemistry major at Stanford.
2. Completion of the following background courses or their equivalents at other institutions:
 - a) CHEM 131, 171, 173, and 175
 - b) BIOC 200, 201
3. Completion of the following courses or their equivalents:
 - a) SBIO 241 and 242
 - b) at least four additional graduate level courses in physical or biological science
 - c) BIOPHYS 250
 - d) MED 255
4. Opportunities for teaching are available during the first nine quarters, at the discretion of the advising committee.

5. The student must prepare a dissertation proposal defining the research to be undertaken, including methods of procedure. This proposal should be submitted by Winter Quarter of the third year, and it must be approved by a committee of at least three members including the principal research adviser and at least one member from the Committee on Biophysics. The candidate must defend the dissertation proposal in an oral examination. The Dissertation Reading Committee normally evolves from the Dissertation Proposal Review Committee.
6. The student must present a Ph.D. dissertation as the result of independent investigation and expressing a contribution to knowledge in the field of biophysics.
7. The student must pass the University oral examination, taken only after the student has substantially completed the research. The examination is preceded by a public seminar in which the research is presented by the candidate.

COURSES

BIOPHYS 205. DNA Repair and Genomic Stability—(Enroll in BIOC 205.)

3 units, Spr (Ford, Hanawalt)

BIOPHYS 210. Advanced Topics in Membrane Trafficking—(Enroll in BIOC 210.)

3 units (Pfeffer) not given 2004-05

BIOPHYS 210A. Molecular Physiology of Cells—Recommended for all MCP graduate students; open to graduate and medical students; advanced undergraduates with consent of instructor. Dynamic aspects of cell function, including cellular energetics, gas exchange, solute transport, absorption and secretion in epithelia, ionic and electrical signaling in nerve and muscle, and sensory physiology. Emphasis is on the cellular function of ion channels and transporters, joining experimental and analytical approaches. Lectures, in-class readings, discussions, student presentations, and the use of mathematical models of cell function. Recommended: MCP 255; basic cell and molecular biology.

4 units, Spr (Lewis, Goodman)

BIOPHYS 211. Biophysics of Sensory Transduction—(Enroll in BIOSCI 211.)

4 units (S. Block) not given 2004-05

BIOPHYS 228. Computational Structural Biology—(Same as SBIO 228.) Online class. Interatomic forces and interactions such as electrostatics and hydrophobicity, and protein structure in terms of amino acid properties, local chain conformation, secondary structure, domains, and families of folds. How protein motion can be simulated. Bioinformatics introduced in terms of methods that compare protein via their amino acid sequences and their three-dimensional structures. Structure prediction via simple comparative modeling. How remote homologues can be detected and modeled. Predicting the structure of a protein from knowledge of its amino acid sequence.

3 units, Aut, Win (Levitt)

BIOPHYS 232. Advanced Imaging Lab in Biophysics—(Same as BIOSCI 132/232, MCP 232.) Laboratory and lectures. Microscopy, emphasizing hands-on experience with a range of apparatus and techniques. Topics include microscope optics, Koehler illumination, contrast-generating mechanisms (bright/dark field, fluorescence, phase contrast, differential interference contrast), and resolution limits. Advanced topics vary by year, but include single-molecule fluorescence, fluorescence resonance energy transfer, confocal microscopy, two-photon microscopy, optical trapping, and fiberoptic methods. Limited enrollment. Recommended: basic physics, Biological Sciences core or equivalent, or consent of instructor. GER:2a

4 units, Spr (S. Block, Schnitzer, S. Smith, Stearns)

BIOPHYS 241. Biological Macromolecules—(Enroll in SBIO 241.)

3-5 units, Aut (Puglisi, Block, Herschlag, Kirkegaard, McKay, Pande, Garcia)

BIOPHYS 242. Methods in Molecular Biophysics—(Enroll in SBIO 242.)

3 units, Win (Weis, Puglisi) alternate years, not given 2005-06

BIOPHYS 250. Seminar in Biophysics—All graduate students in Biophysics must participate. Presentation of current research projects and results by all faculty in the Biophysics Program.

1 unit, Aut, Win (Staff)

BIOPHYS 255. The Responsible Conduct of Research—(Enroll in MED 255.)

1 unit, Win (Staff)

BIOPHYS 297. Bio-Inorganic Chemistry—(Same as CHEM 297.) Overview of metal sites in biology. Metalloproteins as elaborated inorganic complexes, their basic coordination chemistry and bonding, unique features of the protein ligand, and the physical methods used to study active sites. Active site structures are correlated with function. Prerequisites: 153 and 173, or equivalents.

3 units, Win (Solomon)

BIOPHYS 300. Research

1-18 units, Aut, Win, Spr, Sum (Staff)

BIOPHYS 399. Directed Reading

1-18 units, by arrangement (Staff)

BIOPHYS 450. Introduction to Biotechnology—(Enroll in CHEMENG 450, BIOC 450.)

3 units, Spr (Staff)

BIOPHYS 459. Frontiers in Interdisciplinary Biosciences—(Crosslisted in departments in the schools of H&S, Engineering, and Medicine; student register through their affiliated departments; otherwise register for CHEMENG 459) See CHEMENG 459 or http://biox.stanford.edu/courses/459_announce.html.

1 unit, Aut, Win, Spr (Robertson)



CHEMISTRY*

Emeriti: (Professors) William A. Bonner, Michel Boudart, Carl Djerassi, Eric Hutchinson, Harden M. McConnell, John Ross, Douglas A. Skoog, Henry Taube, Eugene E. van Tamelen

Chair: Hans C. Andersen

Professors: Hans C. Andersen, Steven G. Boxer, John I. Brauman, James P. Collman, Michael D. Fayer, Keith O. Hodgson, Wray H. Huestis, Chaitan Khosla, Eric T. Kool, W. E. Moerner, Robert Pecora, Edward I. Solomon, Barry M. Trost, Robert M. Waymouth, Paul A. Wender, Richard N. Zare

Associate Professors: Christopher E. D. Chidsey, Hongjie Dai, T. Daniel P. Stack

Assistant Professors: Justin Du Bois, Jennifer J. Kohler, Vijay S. Pande, Dmitry V. Yandulov

Courtesy Professors: Curtis W. Frank, Daniel Herschlag, Robert J. Madix

Courtesy Associate Professor: Stacey F. Bent

Courtesy Assistant Professors: James K. Chen, Karlene A. Cimprich, Thomas J. Wandless

Lecturer: Christopher R. Moylan

Director of Undergraduate Laboratories: Christopher R. Moylan

* The curriculum leading to the B.S. degree in Chemical Engineering is described in the "School of Engineering" section of this bulletin.

Department Offices: 121 S. G. Mudd

Mail Code: 94305-5080

Phone: (650) 723-2501

Web Site: <http://www.stanford.edu/dept/chemistry/>

Courses given in Chemistry have the subject code CHEM. For a complete list of subject codes, see Appendix.

UNDERGRADUATE PROGRAMS BACHELOR OF SCIENCE

Entrance Preparation—Students intending to major in Chemistry are expected to have entrance credit in the preparatory subjects of chemistry, physics, and mathematics. Those who do not have entrance credit or equivalent training in these subjects, particularly mathematics, may experience some difficulty in meeting the department requirements for graduation in four years, especially if they expect to pursue a program leading to professional certification by the American Chemical Society or to the B.S. degree with honors.

Minimum Requirements—University Writing and General Education Requirements; MATH 41, 42; MATH 51, 53, or ENGR 154, 155A, 155B; PHYSICS 51, 52, 53, 55, 56; CHEM 31A and B or 31X, 33, 35, 36, 130, 131, 134, 136, 151, 153, 171, 173, 174, 175, 176. In addition, CS 106A and B are strongly recommended for students planning graduate study. Students interested in attending an overseas campus should consult their advisers as early as possible to avoid scheduling problems. Note that it is particularly convenient to attend an overseas campus during Spring Quarter of the second or third year, since the courses listed in this quarter may be delayed to subsequent years without disadvantage. No required course may be taken on a credit/no credit basis. Information on the undergraduate program is found at <http://www.stanford.edu/dept/chemistry/undergrad/>.

TYPICAL SCHEDULE FOR A FOUR-YEAR PROGRAM

FIRST YEAR

Course No. and Subject	Qtr. and Units		
	A	W	S
CHEM 31X. Chemical Principles	4		
CHEM 33. Structure and Reactivity		4	
CHEM 35. Monofunctional Compounds			4
CHEM 36. Chemical Separations			3
MATH 41, 42, 51. Calculus, Linear Equations	5	5	5
Writing and General Education Requirements or Electives*	6	6	3
Totals	15	15	15

SECOND YEAR

CHEM 131. Polyfunctional Compounds	3		
CHEM 130. Qualitative Organic Analysis	4		
CHEM 134. Theory and Practice of Quantitative Chemistry	5		
CHEM 136. Synthesis Laboratory		3	
MATH 53. Differential Equations		5	
PHYSICS 51-52, 53, 55-56. Light and Heat, Mechanics, Electricity, and Magnetism	5	4	5
Electives*	3	6	2
Totals	15	15	15

THIRD AND FOURTH YEARS

CHEM 151, 153. Inorganic Chemistry		3	3
CHEM 171, 173, 175. Physical Chemistry	3	3	3
CHEM 174, 176. Physical Chemistry Laboratory		4	3
Electives*	27	20	21
Totals	30	30	30

* Elective courses must be used to complete the University Writing, General Education, and Language Requirements. They may also be used to broaden one's background in science and nonscience areas and to provide an opportunity for advanced study in Chemistry. Courses offered by other departments that may be of interest to chemistry majors include BIOC 237, 241; BIOSCI 41, 42, 43; CHEMENG 20, 120A,B, 130, 187; CS 106A,B; ECON 1; ENGLISH 191; ENGINEER 50; MATH 52, 106, 109, 113, 131, 132; MATSCI 50; PHYSICS 110, 111, 132; STATS 60, 110, 116.

MINORS

Courses required for a minor are CHEM 33, 35, 36, 130, 131, 134, 151, 171; MATH 51; and PHYSICS 21, 23, 25, or 28, 29, or 51, 53, 55 (no substitutions). No course for the minor may be taken CR/NC.

AMERICAN CHEMICAL SOCIETY CERTIFICATION

Students who wish to be certified as having met the minimum requirements of the American Chemical Society for professional training must complete, in addition to the above requirements, CHEM 187 and 6 units of CHEM 190.

HONORS PROGRAM

A limited number of undergraduates may be admitted to the Chemistry honors program at the beginning of Spring of the junior year. Those completing the program satisfactorily receive the B.S. degree in Chemistry with honors.

Admission to the program requires a grade point average (GPA) of at least 3.0 in all course work in the University. In addition to the minimum requirements for the B.S. degree, the student must complete 9 units of CHEM 190 during the junior/senior years; 9 additional units (including 3 units above 200 in Chemistry) from BIOC 237, 241; CHEM 187, 221, 223, 225, 251, 253, 255, 271, 273, 275, 297; MATH 131, 132; MPHA 201; Physics lecture courses numbered greater than 100; or other advanced courses approved by the department's undergraduate study committee. A written report (two-page minimum) for each quarter of CHEM 190 is required detailing the progress in the quarter, and reflecting the units undertaken. This report must be signed and approved by the research adviser and filed in the department student services office in Organic Chemistry, Room 115, before the last day of finals in the quarter during which the research is done. Students may not overlap (double count) courses for completing honors, major, minor, and coterminal requirements. An overall grade point average (GPA) of 3.3 in all Chemistry, Mathematics, and Physics course work including 9 (most recent) units in CHEM 190 is required for a degree with honors.

Students who wish to be admitted to the honors program should register in the department student services office in Organic Chemistry, Room 115, at the beginning of Spring Quarter of the junior year. Those who do not meet all of the above formal requirements may petition the department for admission.

TEACHING CREDENTIALS

The requirements for certification to teach chemistry in the secondary schools of California may be ascertained by consulting the section on credentials under the "School of Education" section of this bulletin and the Credential Administrator of the School of Education.

GRADUATE PROGRAMS

The University's basic requirements for the M.S., M.A.T., and Ph.D. degrees are discussed in the "Graduate Degrees" section of this bulletin.

GENERAL REQUIREMENTS

Placement Examinations—Each new graduate student must take placement examinations on entrance. These consist of three written examinations of two hours each in the fields of inorganic, organic, and physical chemistry, and cover such material as ordinarily is given in a rigorous one-year undergraduate course in each of these subjects. Students majoring in biophysical chemistry must take examinations in biophysical and physical chemistry, and either organic or inorganic chemistry. All placement examinations are given the week before instruction begins in Autumn Quarter, and must be taken at that time. Each new graduate student meets with a member of the Graduate Study Committee to define a program of courses based on results of the placement examinations.

Candidates for advanced degrees must have a minimum grade point average (GPA) of 3.0 for all Chemistry lecture courses as well as for all courses taken during graduate study. Required courses may not be taken with the credit/no credit option. All students are expected to give full time to graduate work once they have begun dissertation research. All prospective Ph.D. candidates, regardless of the source of financial support, are required to gain teaching experience as an integral part of graduate training. During the period in which a dissertation is being read by members of the faculty, candidates must be available for personal consultation until the dissertation has had final department approval.

MASTER OF SCIENCE

Applicants for the M.S. degree in Chemistry are required to complete, in addition to the requirements for the bachelor's degree, a minimum of 45 units of work and an M.S. thesis. Of the 45 units, approximately two-thirds must be in the department and must include at least 12 units of graduate-level lecture courses exclusive of the thesis. Of the 12 units, at least 6 units must be from CHEM 221, 223, 225, 251, 253, 255, 271, 273, 275, 276, or 297.

MASTER OF ARTS IN TEACHING (CHEMISTRY)

In cooperation with the School of Education, the department offers a program leading to the Master of Arts in Teaching (Chemistry). This degree is for candidates who have a teaching credential and wish to strengthen further their academic preparation. Interested candidates should consult with the chair of the Graduate Study Committee in the Department of Chemistry.

DOCTOR OF PHILOSOPHY

Graduate students are eligible to become formal candidates for the Ph.D. degree after taking the department placement examinations, satisfactorily completing most of the formal lecture course requirements, and beginning satisfactory progress on a dissertation research project. They then file for admission to candidacy for the Ph.D. degree. This filing must be done before June of the second year of graduate registration.

After taking the departmental placement examinations, students select research advisers by first interviewing members of the Chemistry faculty about their research. Students then file an Application to Start Research form with the Department of Chemistry Graduate Study Committee and begin research on their Ph.D. dissertation under the supervision of the adviser. All students in good standing are required to start research by the end of the Winter Quarter of the first year of graduate registration.

There is no foreign language requirement for the Ph.D. degree.

Candidates for the Ph.D. degree are required to participate continually in the department seminar (CHEM 300), and in the division seminar of the major subject. In addition, continuous enrollment in CHEM 301 is expected after the student has chosen a research supervisor. As part of graduate training, Ph.D. candidates are required to gain experience as teaching assistants.

Before candidates may request scheduling of the University oral examination, clearance must be obtained from the major professor and the chair of the department's Graduate Study Committee. Conditions that must be fulfilled before clearance is granted vary with the different divisions of the department and may be ascertained by consulting the chair of the committee.

It is the policy of the department to encourage and support in every possible way the pursuit of research and other advanced work by qualified students. Information about faculty members with lists of their recent research publications is found in *Chemistry at Stanford*, the *Directory of Graduate Research* published by the American Chemical Society, and at <http://www.stanford.edu/dept/chemistry/faculty.html>.

COURSE REQUIREMENTS

Students may major in biophysical, inorganic, organic, or physical chemistry. All graduate students are required to take six graduate-level lecture courses (course numbers greater than 199) of at least 3 units each in chemistry or related disciplines (for example, biochemistry, electrical engineering, mathematics, pharmacology, physics, and so on), to be selected in consultation with their research adviser and the Graduate Study Committee. At least four of these courses should be taken by the end of the first year. Required courses must be taken for a letter grade.

In addition, students majoring in organic chemistry must take 3 units in CHEM 231 in the second year and 3 units in 233 in the second and third year. Students in physical or biophysical chemistry or chemical physics must take CHEM 271, 273, and 275 in the first year, and 2 units in CHEM 278 in the second and third year. Students majoring in inorganic chemistry must take 3 units in CHEM 258 in the second, third, and fourth year.

CHEMICAL PHYSICS

Students with an exceptionally strong background in physics and mathematics may, upon special arrangement, pursue a program of studies in chemical physics.

PH.D. MINOR

Candidates for the Ph.D. degree in other departments who wish to obtain a minor in chemistry must complete, with a GPA of 3.0 or higher, 20 graduate-level units in chemistry including four lecture courses of at least 3 units each.

FELLOWSHIPS AND SCHOLARSHIPS

In addition to school fellowships and scholarships open to properly qualified students, there are several department fellowships in chemistry. Undergraduate scholarships are administered through the Financial Aid Office. Teaching assistantships and research assistantships are open to graduate students. Graduate fellowships, scholarships, and teaching assistantships are administered through the Department of Chemistry.

COURSES

WIM indicates that the course satisfies the Writing in the Major requirements.

Note—Lab fees, against which charges are made for breakage, are a minimum of \$35 per quarter.

UNDERGRADUATE

CHEM 17N. Light, Pigments, and Organisms—(Same as BIOSCI 17N.) Stanford Introductory Seminar. Preference to freshmen. Multidisciplinary lab course. The molecular basis of pigments, light absorption, color, and fluorescence using chemical techniques and biological materials. Topics include: the diversity of photosynthetic pigments, how cyanobacteria modify their pigment composition in diverse light environments, and the importance of photoreceptors in assessing an organism's light environment. GER:2a

4 units, Win (Elrad, Grossman, Bhaya, Zare)

CHEM 22N. Naturally Dangerous—Stanford Introductory Seminar. Topics from Collman's *Naturally Dangerous: Surprising Facts About Food, Health, and the Environment*. Designed for nonscientists, but also of interest to scientists and engineers.

2 units, Spr (Collman)

CHEM 23N. Chemistry and Biology in Biotechnology—Stanford Introductory Seminar. Preference to freshmen. An enrichment of introductory organic chemistry with biological applications. A clinically important molecule is selected to illustrate important contributions that biology has made to chemistry and vice versa. Topics: structure elucidation of complex molecules, chemical and biological synthesis of complex molecules, mechanism of action, and drug or agrochemical development. Pre- or corequisite: 33. GER:2a

3 units, Win (Khosla)

CHEM 24N. Nutrition and History—Stanford Introductory Seminar. Preference to freshmen. Intended to broaden the introductory chemistry experience. The biochemical basis of historically important nutritional deficiencies (vitamins, minerals, starvation, metabolic variants that predispose to disease) and environmental toxins is related to physiological action and the sociological, political, and economic consequences of its effect on human populations. Prerequisite: high school chemistry. Recommended: 31A,B, or 31X, or 33.

2 units, Spr (Huestis)

CHEM 31A. Chemical Principles I—For students with moderate or no background in chemistry. Stoichiometry; periodicity; simple models of ionic and covalent bonding; dissolution/precipitation, acid/base, and oxidation/reduction reactions; gas laws; phase behavior; rates of reactions. Emphasis is on skills to address structural and quantitative chemical questions. Recitation. GER:2a

4 units, Aut (Chidsey, Zare)

CHEM 31B. Chemical Principles II—Chemical equilibria; rates and mechanisms to reach equilibrium; thermochemistry, free energy, and relation to equilibrium; quantum concepts, and atomic and molecular orbital theory. Recitation. Prerequisite: 31A. GER:2a

4 units, Win (Chidsey, Zare)

CHEM 31X. Chemical Principles—Accelerated; for students with substantial chemistry background. Chemical equilibria concepts, equilibrium constants, acids and bases, chemical thermodynamics, quantum concepts, models of ionic and covalent bonding, atomic and molecular orbital theory, periodicity, and bonding properties of matter. Recitation. Prerequisites: high school chemistry and algebra. Recommended: high school physics. GER:2a

4 units, Aut (Boxer, Waymouth), Win (Fayer), Sum (Staff)

CHEM 33. Structure and Reactivity—Organic chemistry, functional groups, hydrocarbons, stereochemistry, thermochemistry, kinetics, chemical equilibria. Recitation. Prerequisite: 31A,B, or 31X, or an AP Chemistry score of 4 or 5. GER:2a

4 units, Win (Stack, Kool), Spr (DuBois, Kohler), Sum (Staff)

CHEM 35. Organic Monofunctional Compounds—Organic chemistry of oxygen and nitrogen aliphatic compounds. Recitation. Prerequisite: 33. GER:2a

4 units, Aut (Huestis), Spr (Waymouth), Sum (Staff)

CHEM 36. Chemical Separations—Techniques for separations of compounds; distillation, crystallization, extraction, and chromatographic procedures. Lecture treats the theory; lab provides practice. Corequisite: 33. GER:2a

3 units, Spr, Sum (Moylan)

CHEM 110. Directed Instruction/Reading—Undergraduates pursue a reading program under supervision of a faculty member in Chemistry; may also involve participation in lab. Prerequisites: superior work in 31A,B, 31X, or 33; and consent of instructor and the Chemistry undergraduate study committee.

1-2 units, Aut, Win, Spr, Sum (Staff)

CHEM 111. Exploring Chemical Research at Stanford—Preference to freshmen and sophomores. Department faculty describe their cutting-edge research and its applications.

1 unit, Win (Huestis)

CHEM 130. Qualitative Organic Analysis—Separation of mixtures of organic compounds and identification of unknown components using wet chemical tests and spectral techniques. Lab. Prerequisite: 36. Corequisite: 35. GER:2a
4 units, Aut (Moylan)

CHEM 131. Organic Polyfunctional Compounds—Aromatic compounds, polysaccharides, amino acids, proteins, natural products, dyes, purines, pyrimidines, nucleic acids, and polymers. Prerequisite: 35. GER:2a
3 units, Aut (Kool), Win (Trost)

CHEM 134. Theory and Practice of Quantitative Chemistry—Methods include gravimetric, volumetric, spectrophotometric, and electrochemical. Lab. Prerequisite: 130. GER:2a, WIM
5 units, Win (Zare)

CHEM 135. Physical Chemical Principles—Terminal physical chemistry for non-chemistry majors. Emphasis is on portions of physical chemistry most useful for students of the life sciences. Introduction to chemical thermodynamics: rate laws, integration of rate laws, reaction mechanisms, enzyme kinetics. Introduction to chemical thermodynamics: first, second, and third laws, thermochemistry, entropy, free energy, chemical equilibrium, osmotic pressure, other colligative properties. Prerequisites: 31A,B, or 31X, calculus. GER:2a
3 units, Win (Pecora)

CHEM 136. Synthesis Laboratory—Advanced synthetic methods in organic and inorganic laboratory chemistry. Prerequisites: 35, 130. GER:2a
3 units, Spr (Yandulov)

CHEM 151. Inorganic Chemistry I—Systematic introduction to the theories of electronic structure, stereochemistry, and symmetry properties of inorganic and organometallic molecules. Topics: ionic and covalent interactions, electron-deficient bonding, and elementary ligand field and molecular orbital theories. Emphasis is on the chemistry of the metallic elements. Prerequisites: 35. Recommended: 171. GER:2a
3 units, Win (Stack)

CHEM 153. Inorganic Chemistry II—Systematic presentation of the theoretical aspects of inorganic chemistry. Group theory; many electron atomic theory; molecular orbital theory, emphasizing general concepts and group theory; ligand field theory; application of physical methods to predict the geometry, magnetism, and electronic spectra of transition metal complexes. Prerequisites: 151, 173. GER:2a
3 units, Spr (Solomon)

CHEM 171. Physical Chemistry—Chemical thermodynamics; fundamental principles, Gibbsian equations, systematic deduction of equations, equilibrium conditions, phase rule, gases, solutions. Prerequisites: 31A,B, or 31X, 35; MATH 51. GER:2a
3 units, Aut (Pande)

CHEM 173. Physical Chemistry—Introduction to quantum chemistry: the basic principles of wave mechanics, the harmonic oscillator, the rigid rotator, infrared and microwave spectroscopy, the hydrogen atom, atomic structure, molecular structure, valence theory. Prerequisites: MATH 51, 53, or ENGR 154, 155A, 155B; PHYSICS 51, 53, 55. GER:2a
3 units, Win (Boxer)

CHEM 174. Physical Chemistry Laboratory—Experimental investigations in spectroscopy, thermodynamics, and electronics. Students take measurements on molecular systems, design and build scientific instruments, and computer-automate them with software that they write themselves. Prerequisites: 134, PHYSICS 56. Corequisites: 173, MATH 53. GER:2a
4 units, Win (Moylan)

CHEM 175. Physical Chemistry—Introduction to kinetic theory and statistical mechanics: molecular theory of matter and heat, transport phenomena in gases, Boltzmann distribution law, partition functions for ideal gases. Introduction to chemical kinetics: measurement of rates of reactions, relationship between rate and reaction mechanism, consider-

ation of specific reactions, transition-state theory of reaction rates. Prerequisites: 171, 173. GER:2a
3 units, Spr (Moerner)

CHEM 176. Physical Chemistry Laboratory—Use of chemical instrumentation to study fundamental areas of physical chemical time-dependent processes. Experiments include reaction kinetics, fluorimetry, and nuclear magnetic and electron spin resonance spectroscopy. Lab. Prerequisites: 173, 174, previous or concurrent enrollment in 175. GER:2a
3 units, Spr (Dai)

CHEM 181. Special Topics in Organic Chemistry—Primarily for chemistry majors. Organometallic, bioinorganic, and redox chemistry. Prerequisites: 131, calculus. GER:2a
3 units (Collman) not given 2004-05

CHEM 187. Biochemistry—(Same as CHEMENG 187/287, BIOSCI 187/287.) Structure and function of biological molecules, enzyme kinetics and mechanisms, bioenergetics, pathways of intermediary metabolism and their control, and membrane structure and function. Lectures on special topics. Clinical correlations. Prerequisites: organic chemistry, cell biology, or consent of instructor. GER:2a
4-5 units, Win (Khosla)

GRADUATE

CHEM 221. Advanced Organic Chemistry—Molecular orbital theory and orbital symmetry. Thermochemistry and thermochemical kinetics. Unimolecular reaction rate theory. Methods of determining organic reaction mechanisms from a theoretical and experimental point of view. Prerequisites: 175, 181.
3 units, Aut (Staff)

CHEM 223. Advanced Organic Chemistry—Continuation of 221 with emphasis on physical methods. Prerequisite: 221 or consent of instructor.
3 units, Win (Trost)

CHEM 225. Advanced Organic Chemistry—Continuation of 223. Organic reactions, new synthetic methods, conformational analysis, and exercises in the syntheses of complex molecules. Prerequisite: 223 or consent of instructor.
3 units, Spr (Wender)

CHEM 227. Topics in Organic Chemistry—May be repeated for credit. Possible topics: synthetic organic chemistry, photochemistry, inorganic-organic chemistry, bio-organic chemistry, reaction mechanisms, stereochemistry, structural chemistry of organic and biological molecules.
3 units, Aut (Staff)

CHEM 229. Organic Chemistry Seminar—Attendance required of all graduate students majoring in organic chemistry. Students giving seminars register for 231.
1 unit, Aut, Win, Spr (Staff)

CHEM 231. Organic Chemistry Seminar Presentation—Required of all graduate students majoring in organic chemistry for the year in which they present their organic seminar. Second-year students must enroll all quarters.
1 unit, Aut, Win, Spr (Staff)

CHEM 232. Protein Science and Engineering—(Same as CHEMENG 452.) The physio-chemical interactions that govern the structure and function of proteins. Topics: protein function and structure, techniques for probing protein structure and function, mechanisms of protein function, design of proteins with novel properties. Examples from literature on enzymes. Recommended: background in physical and organic chemistry.
3 units (Khosla) not given 2004-05

CHEM 233A,B,C. Creativity in Organic Chemistry—Required of all second- and third-year Ph.D. candidates in organic chemistry. The art of formulating, writing, and orally defending a research progress report (A)

and two research proposals (B, C). Second-year students register for A and B; third-year students register for C.

1 unit, A: Aut, B,C: Spr (Staff)

CHEM 235. Applications of NMR Spectroscopy—The uses of NMR spectroscopy in chemical and biochemical sciences, emphasizing data acquisition for liquid samples and including selection, setup, and processing of standard and advanced experiments.

3 units, Win (Lynch)

CHEM 251. Advanced Inorganic Chemistry—Chemical reactions of inorganic compounds with focus on mechanisms of reactions mediated by inorganic and organometallic complexes. The structural and electronic basis of reactivity including oxidation and reduction; kinetics and thermodynamics of inorganic reactions. Prerequisite: one year of physical chemistry.

3 units, Aut (Yandulov)

CHEM 253. Advanced Inorganic Chemistry—Electronic structure and physical properties of transition metal complexes. Ligand field and molecular orbital theories, magnetism and magnetic susceptibility, electron paramagnetic resonance (including hyperfine interactions and zero field splitting) and electronic absorption spectroscopy (including vibrational interactions). Prerequisite: 153 or the equivalent.

3 units (Solomon) not given 2004-05

CHEM 255. Advanced Inorganic Chemistry—Chemical reactions of organotransition metal complexes and their role in homogeneous catalysis. Analogous patterns among reactions of transition metal complexes in lower oxidation states. Physical methods of structure determination. Prerequisite: one year of physical chemistry.

3 units (Waymouth) not given 2004-05

CHEM 258A,B,C. Research Progress in Inorganic Chemistry—Required of all second-, third-, and fourth-year Ph.D. candidates in inorganic chemistry. Students present their research progress in written and oral forms (A); present a seminar in the literature of the field of research (B); and formulate, write, and orally defend a research proposal (C). Second-year students register for A; third-year students register for B; fourth-year students register for C.

1 unit, A: Win, B: Spr, C: Aut, Win (Staff)

CHEM 259. Inorganic Chemistry Seminar—Required of all graduate students majoring in inorganic chemistry.

1 unit, Aut, Win, Spr (Yandulov)

CHEM 271. Advanced Physical Chemistry—The principles of quantum mechanics. General formulation, mathematical methods, and elementary applications of quantum theory to the structure of atoms and molecules, including variational procedures, perturbation theory, operator and matrix methods, theory of angular momentum, and elements of the electronic structure of atoms. Prerequisite: 175.

3 units, Aut (Fayer)

CHEM 273. Advanced Physical Chemistry—Topics in advanced quantum mechanics: vibrations and rotations of polyatomic molecules (normal modes, anharmonicity, wavefunctions and energy levels of rigid rotations, vibration-rotation interaction), *ab initio* electronic structure theory (Hartree-Fock, configuration interaction, multiconfiguration self-consistent-field, and many-body perturbation theory techniques), angular momentum theory (operators and wavefunctions, Clebsch-Gordan coefficients, rotation matrices), time-dependent quantum mechanics (time evolution operator, Feynman path integrals, scattering theory, Born approximation, Lipmann-Schwinger equation, correlation functions), interaction of radiation and matter (semiclassical and quantum theories of radiation, transition probabilities, selection rules). Prerequisite: 271 or PHYSICS 230.

3 units, Win (Dai)

CHEM 275. Advanced Physical Chemistry—The basic principles and methods of statistical mechanics from the ensemble point of view, statistical thermodynamics, heat capacities of solids and polyatomic

gases, chemical equilibria, equations of state of fluids, and phase transitions. Prerequisite: 271.

3 units, Spr (Pecora)

CHEM 276. Advanced Physical Chemistry—Time-dependent statistical mechanics: ensemble theory for equilibrium and nonequilibrium systems; static and dynamic correlation functions for fluctuating equilibrium systems; the relationship of correlation functions, spectroscopy, and transport; dynamical models used in chemistry, including classical mechanics, quantum mechanics, Brownian dynamics, Smoluchowski dynamics, and Markov processes. Applications to topics of interest in physical chemistry. Prerequisite: 275.

3 units (Staff) not given 2004-05

CHEM 277. Topics in Physical Chemistry—Possible topics: structure elucidation using diffraction techniques, advanced statistical mechanics, crystal field theory, advanced quantum mechanics, magnetic relaxation, advanced thermodynamics, chemical applications of group theory. May be repeated for credit. Prerequisite: 275 or consent of instructor.

3 units (Staff) not given 2004-05

CHEM 278A,B. Research Progress in Physical Chemistry—Required of all second- and third-year Ph.D. candidates in physical and biophysical chemistry and chemical physics. Second-year students present their research progress and plans in brief written and oral summaries (A); third-year students prepare a written progress report (B).

1 unit, A: Win, B: Win (Staff)

CHEM 279. Physical Chemistry Seminar—Required of all graduate students majoring in physical chemistry.

1 unit, Aut, Win, Spr (Dai)

CHEM 280. Ultrasensitive Laser Spectroscopy—The theoretical and experimental techniques necessary to achieve extreme sensitivity in laser spectroscopy: interaction of radiation with spectroscopic transitions in chemistry; generation, detection, and modification of laser light; principles of nonlinear optics; applications to modern problems in chemical science such as single-molecule spectroscopy, multiphoton spectroscopy, and gas-phase high resolution spectroscopy of transient species. Prerequisites: 271, previous or concurrent enrollment in 273.

3 units (Moerner) not given 2004-05

CHEM 297. Bio-Inorganic Chemistry—(Same as BIOPHYS 297.) Overview of metal sites in biology. Metalloproteins as elaborated inorganic complexes, their basic coordination chemistry and bonding, unique features of the protein ligand, and the physical methods used to study active sites. Active site structures are correlated with function. Prerequisites: 153 and 173, or equivalents.

3 units, Win (Solomon)

CHEM 299. Teaching of Chemistry—Required of all teaching assistants in Chemistry. Techniques of teaching chemistry by means of lectures and labs.

1-3 units, Aut, Win, Spr (Moylan)

CHEM 300. Department Colloquium—Required of all graduate students.

1 unit, Aut, Win, Spr (Huestis)

CHEM 301. Research in Chemistry—Required of all graduate students who have passed the qualifying examination. Open to qualified graduate students with the consent of the major professor. Research seminars and directed reading deal with newly developing areas in chemistry and experimental techniques. May be repeated for credit. Search for adviser name on Axess.

2 units, Aut, Win, Spr, Sum (Staff)

CHEM 459. Frontiers in Interdisciplinary Biosciences—(Crosslisted in departments in the schools of H&S, Engineering, and Medicine; student register through their affiliated departments; otherwise register for CHEMENG 459) See CHEMENG 459 or http://biox.stanford.edu/courses/459_announce.html

1 unit, Aut, Win, Spr (Robertson)

RESEARCH AND SPECIAL ADVANCED WORK

CHEM 190. Introduction to Methods of Investigation—Limited to undergraduates admitted under the honors program or by special arrangement with a member of the teaching staff. For general character and scope, see 200. Prerequisite: 130. Corequisite: 300.

1-5 units, Aut, Win, Spr, Sum (Staff)

CHEM 200. Research and Special Advanced Work—Properly qualified graduate students are encouraged to undertake research, or advanced lab work not covered by listed courses, under the direction of a member of the teaching staff. For research and special work students register for 200, giving section number of staff member under whom work is carried on and number of units agreed upon.

1-15 units, Aut, Win, Spr, Sum (Staff)

CLASSICS

Emeriti: (Professors) Mark W. Edwards, Michael H. Jameson, Susan Treggiari, Michael Wigodsky; *(Professor, Teaching):* Edward Spofford
Chair: Susan Stephens

Graduate Director: Walter Scheidel

Undergraduate Director: Joseph Manning

Professors: Alessandro Barchiesi, Susanna Braund, Andrew M. Devine, Richard P. Martin, Marsh H. McCall, Jr., Ian Morris (Classics, History), Reviel Netz, Andrea Nightingale (Classics, Comparative Literature), M. Rush Rehm (Classics, Drama), Walter Scheidel, Michael Shanks, Susan A. Stephens

Associate Professors: Jody Maxmin (Art and Art History, Classics), Joseph Manning, Anastasia-Erasmia Peponi (Acting)

Assistant Professors: Giovanna Ceserani, Jennifer Trimble

Courtesy Professors: Robert C. Gregg, Ian Hodder

Lecturers: Maud Gleason, Patrick Hunt, Norbert Lain

Department Offices: Building 20, Main Quad

Mail Code: 94305-2080

Phone: (650) 723-2581

Email: alicias@stanford.edu

Web Site: <http://www.stanford.edu/dept/classics>

Courses given in Classics have the subject codes CLASSART, CLASSGEN, CLASSGRK, CLASSHIS, and CLASSLAT. For a complete list of subject codes, see Appendix.

UNDERGRADUATE PROGRAMS

The Department of Classics offers courses on all aspects of Greek and Roman culture: art and archaeology, cultural studies, history, language, literature, and philosophy. The department offers five majors in Classics (Ancient History, Classical Studies, Greek, Greek and Latin, and Latin) which vary in the number of language courses they require; each of these majors can be completed in conjunction with a second major in the sciences or in other humanities departments.

The major in Classics affords an opportunity to develop a competence in the classical languages; an appreciation, comprehension, and enjoyment of classical literature; and an understanding of the history and culture of the ancient world and its connections with the present. The department encourages students who wish to do their major work in Classics and also students who wish to relate work in Classics to work in other departments.

BACHELOR OF ARTS

Prospective majors in Classical Studies, Greek, and Latin (options 1, 2, and 3) are encouraged to declare at the beginning of the junior year, but are urged to discuss their plans with the undergraduate director as early as possible. Students who choose to major in Greek and Latin (option 4) should begin the curriculum as soon as possible, since it is difficult to complete the language requirements without an early start; those with no

previous knowledge of Latin or Greek should begin study in the freshman year or as early as possible in the sophomore year.

To declare the major, a student must fill out the Declaration of Major on Axess and meet with the undergraduate director in the Department of Classics. At that time, the undergraduate director assigns each student a department adviser who helps to prepare a program of study; students should meet with their advisers at least once a quarter. Each student's progress towards fulfillment of the major requirements is recorded in a file kept in the main office. It is the student's responsibility to work with his or her adviser in keeping this file up to date.

The B.A. degree may be earned by fulfilling the requirements for one of the five following majors:

1. *Classical Studies:* at least 60 units, including at least two courses in Latin or Greek at the 100 level or higher, *or* one course in one of the languages at the 100 level or higher plus the series 1, 2, 3, or 51 and 52 in the other language (or an equivalent approved by the department). All courses counted for the degree must be taken for a letter grade. In addition, students are required to take the Majors Seminar (CLASSGEN 176) and at least one course in each of the following five groups: ancient history, art and archaeology, literature in translation, philosophy, and religion and mythology. Students are strongly urged to meet with the undergraduate director to discuss options for pursuing a period of study in the Mediterranean region.

This major is recommended for students who wish to study the classical civilizations in depth but do not wish to study the languages to the extent required by options 2, 3, and 4. It is not suitable for students who wish to do graduate work in Classics or to teach Latin or Greek in high school, as the language work is insufficient for these purposes.

2. *Greek:* at least 60 units, including a minimum of 31 units in Greek courses at the 100 level or higher (it is recommended that one of these courses be CLASSGRK 175A, although this course should not be taken until students have completed three years of Greek). All courses counted for the degree must be taken for a letter grade. In addition to courses in Greek, students are required to take the Majors Seminar (CLASSGEN 176) and at least one course in each of the following three groups: history and/or archaeology, literature in translation, and religion and/or philosophy. The introductory sequence (CLASSLAT 1, 2, 3; or 51 and 52) or one 100-level course in Latin is recommended. Beginning courses in Greek, if required, may be counted towards the total of 60 units. Relevant courses in other departments of the humanities may count towards the major with the consent of the undergraduate director. Students are strongly urged to meet with the undergraduate director to discuss options for pursuing a period of study in the Mediterranean region.

3. *Latin:* at least 60 units, including a minimum of 31 units in Latin courses at the 100 level or higher (it is recommended that one of these courses be CLASSLAT 175A, although this course should not be taken until students have completed three years of Latin). All courses counted for the degree must be taken for a letter grade. In addition to courses in Latin, students are required to take the Majors Seminar (CLASSGEN 176) and at least one course in each of the following three groups: history/archaeology, literature in translation, and philosophy/religion. The introductory sequence (CLASSGRK 1, 2, 3, or 51 and 52) or one 100-level course in Greek is recommended. Beginning courses in Latin, if required, may be counted towards the total of 60 units. Relevant courses in other departments of the humanities may count towards the major with the consent of the undergraduate director. Students are strongly urged to meet with the undergraduate director to discuss options for pursuing a period of study in the Mediterranean region.

4. *Greek and Latin:* at least 60 units, including 30 units in Greek courses and the same number in Latin. All courses counted for the degree must be taken for a letter grade. It is recommended that students take CLASSGRK 175A or CLASSLAT 175A (or both), although these courses should not be taken until students have completed three years of the respective language. All students are required to take the Ma-

- jors Seminar (CLASSGEN 176); it is strongly recommended that students take a course in ancient history. Relevant courses in other departments of the humanities may count towards the major with the consent of the undergraduate director. Students are strongly urged to meet with the undergraduate director to discuss options for pursuing a period of study in the Mediterranean region.
5. *Ancient History Major*: at least 60 units of approved courses. All courses counted for the degree must be taken for a letter grade. Students must satisfy four requirements:
 - a) Writing in the Major (WIM) Requirement: this is fulfilled by taking the Majors Seminar (CLASSGEN 176).
 - b) Core Requirements: every major must take at least three survey courses in ancient history (such as Ancient Empires I/II, History and Culture of Ancient Egypt, The Greeks, Hellenistic History, Roman History I/II).
 - c) Depth Requirement: a major must take at least 40 units of ancient history and civilization courses, drawn from courses with CLASSHIS and CLASSGEN prefixes. IHUM 31A,B, The Ancient Empires I and II may be counted toward this or the core requirement. The courses chosen must be approved in advance by the undergraduate director. With the approval of the instructor and the undergraduate director, students may substitute graduate seminars in ancient history for some of these courses.
 - d) Breadth Requirement: each student must take at least 4 units in each of the following areas: archaeology and art, comparative ancient civilizations, and historical and social theory. The courses chosen must be approved in advance by the undergraduate director, and are normally chosen from the list of areas below:
 1. Archaeology and Art: for example, any course with the CLAS-SART prefix; CASA 1/200, 90, 211; ARCHLGY 33; ARTHIST 120A, 200, 200C.
 2. Comparative Ancient Civilizations: majors must take a course on the ancient world outside the Mediterranean and western Asia, for example, ANTHSCI 3, 7, 103, 106, 107, 108, 141, 150; HISTORY 192B.
 3. Historical and Social Theory: for example, CASA 1/201, 90; HISTORY 173C, 202, 206; SOC 1, 110, 113, 140, 142, 170.
 Students are strongly urged to meet with the undergraduate director to discuss options for pursuing a period of study in the Mediterranean region.

Note 1: University credit earned by placement tests or advanced placement work in secondary school is not counted towards any major program in the department; work done in other universities or colleges is subject to department evaluation.

Note 2: a letter grade is required in all courses taken for the major. No course receiving a grade lower than 'C' is counted toward fulfilling major requirements.

MINORS

The undergraduate director meets with each student who opts for a minor to discuss his/her chosen curriculum and assigns the student an adviser in the relevant field. Students are required to work closely with their advisers to create a cohesive curriculum within each area. Students may organize their curriculum according to different principles: for example, they may wish to focus on a specific historical period (Classical Athens, Imperial Rome), or on a specific theme or topic (women in antiquity). After consulting with the adviser, each student must submit (in writing) a "Proposed Curriculum" to the undergraduate director. Students may proceed with the minor when the undergraduate director has approved the proposal. Courses offered in Greek and Latin above the 100 level may count toward the minor, provided the subject matter is suitable.

All students who minor in Classics are required to take the Majors Seminar (CLASSGEN 176), which is writing intensive.

Students may choose between three minors in Classics:

1. *Classical Languages*: students are required to take a minimum of five courses in Greek or in Latin plus the Majors Seminar (CLASSGEN 176). Students wishing to combine Greek and Latin may only do so if courses for one of the two languages are all above the 100 level; for example, CLASSGRK 51, 52, plus CLASSLAT 103, 111, 175.

2. *History*: students are required to take a minimum of five courses in History, Art History, and Archaeology plus the Majors Seminar (CLASSGEN 176). Courses offered in Latin and Greek that focus on historical topics or authors may count toward the minor.
3. *Literature and Philosophy*: students are required to take a minimum of five courses in classical literature or philosophy plus the Majors Seminar (CLASSGEN 176). Courses offered in Latin and Greek that focus on philosophical or literary topics or authors may count toward the minor.

HONORS PROGRAMS

A minimum grade point average (GPA) of 3.3 in Classics courses is required for students to enroll in the honors program. To be considered for honors in Classics, the student must select a professor who can supervise his or her honors thesis. Together with the supervisor, the student writes a two- to three-page proposal at the beginning of the senior year. The proposal should outline the project in detail, list relevant courses that have been taken, and name the supervisor. The department gives approval only if it is satisfied that the student has a sufficient basis of knowledge derived from department course work in the general areas the thesis covers (i.e., course work in Art, Greek and/or Latin language, History, Literature, Philosophy, etc.). If the proposal is approved, the student may sign up for undergraduate thesis (CLASSGEN 199) during one or two quarters of the senior year for a maximum of 6 units a term, up to an overall total of 10 units. Honors are awarded only if the essay receives a grade of 'B+' or higher from the supervisor and a second reader.

HUMANITIES

For majors in Classics with appropriate interests, the honors program in Humanities is available, a description of which is found under the "Interdisciplinary Studies in Humanities" section of this bulletin.

OVERSEAS STUDIES

Funding—Students whose record in Classics indicates that they are fully qualified for a given program may apply for funding from the Department of Classics. Students must submit a proposal to the undergraduate director, which should include an itemized list of expenses based on the fees charged by the program (that is, room, board, tuition, and other expenses). Limited funding is available each year; preference is shown to students with strong records.

Programs—

1. *Rome*: Classics majors are encouraged to apply for the Intercollegiate Center for Classical Studies (ICCS) in Rome which is managed by Duke University for about 50 constituent colleges and universities. It is open to Stanford majors in Classics, History, and Art History. All courses receive full credit at Stanford and may be applied to the respective major. Students interested in this program should consult the undergraduate director and the ICCS representative in the Department of Classics as early as possible in their career at Stanford to plan their course preparation and application. Competition is strong and applicants are expected to have taken one or more courses in Roman history and at least two years of Latin before they arrive in Rome. Brochures are available at the department office.

Other programs offer a quarter, semester, or summer session in Rome. Interested students are urged to visit Bechtel International Center.

2. *Greece*: students are encouraged to apply for the summer session at the American School of Classical Studies in Athens. The school is recommended principally for Classics majors with at least two years of ancient Greek. A student wishing to apply should prepare by taking courses in Greek history, archaeology, and art; beginning modern Greek is strongly recommended. Applicants should see the undergraduate director early in the academic year. Other programs offer a quarter, semester, or summer session in Greece. Interested students are urged to visit Bechtel International Center.

GRADUATE PROGRAMS

MASTER OF ARTS

University requirements for the master's degree are described in the "Graduate Degrees" section of this bulletin.

Students who have completed an undergraduate major in Classics (in Greek, Latin, or Greek and Latin) or its equivalent may be accepted as candidates for the M.A. degree in Classics and may expect to complete the program in twelve months (usually three quarters of course work plus three months study for the thesis or examination). Students with an undergraduate major in Classics (Ancient History or Classical Studies) or without an undergraduate major in Classics may also be accepted as candidates, though they may require a longer period of study before completing the requirements for the degree. These requirements are:

1. Attaining a standard of scholarship such as would be reached by three quarters of study in the department after fulfilling the requirements for an undergraduate major in the department. Normally, this means completing at least 25 units of graduate courses and 20 units of work at the 140 level or above.
2. Satisfactory completion of one Greek course at the 100 level (if the undergraduate major has been Latin) or one Latin course at the 100 level (if the undergraduate major has been Greek). This requirement is waived for students with an undergraduate major in Classics (Greek and Latin).
3. Passing an examination testing the candidate's ability to translate into English from a selected list of Greek and/or Latin authors.
4. Satisfactory completion of the 275A,B sequence in at least one language (Latin or Greek).
5. Writing a thesis, or passing of an examination on a particular author or topic, or having written work accepted by the graduate committee as an equivalent. Three completed and satisfactory seminar papers are normally an acceptable equivalent.
6. A reading examination in French or German; these examinations are administered every quarter.
7. Completion of a Program Proposal for a Master's Degree form in the first quarter of enrollment.

Candidates for the Ph.D. degree may also (on the recommendation of the department) become candidates for the M.A. degree. In their case, requirement '5' above is waived provided that they have completed some work beyond the course requirements listed under requirements '1' and '2' above.

DOCTOR OF PHILOSOPHY

University requirements for the Ph.D. are described in the "Graduate Degrees" section of this bulletin. There are four tracks within the Classics Ph.D. program: Language and Literature; Classical Archaeology; Ancient History; and Ancient Philosophy.

1. Language and Literature—All candidates for the Ph.D. degree in Classics with specialty in Language and Literature must fulfill the following requirements:

1. Complete 135 units of academic credit or equivalent in study beyond the bachelor's degree at the end of the fourth year.
2. This includes:
 - a) Greek and Latin Survey sequence (CLASSGEN 207-208)
 - b) Greek and Latin Syntax sequence (CLASSGRK 275A,B and CLASSLAT 275A,B)
 - c) Semantics of Grammar sequence (CLASSGEN 205A,B)
 - d) twelve graduate seminars, nine of which must be Classics seminars, and one of the remaining three of which must be outside the department. The other two seminars may be in Classics, from other departments (with Director of Graduate Studies approval), and/or directed readings. However, no more than two directed readings can be taken. Classics seminars are generally offered for 4-5 units. In some cases, instructors allow a student to complete a seminar for 4 units without requiring a written paper but with completion of all other requirements.

3. Examinations:
 - a) Students must take Greek and Latin translation exams at the end of each survey sequence (the end of the first and second years). These exams are based on the Greek and Latin reading lists available on the Classics Department web site at: <http://www.stanford.edu/dept/classics>. Greek and Latin survey courses cover less than half of the material on which the translation exams test, and students need to prepare much of the work on their own. It is possible to take both exams in the same year if the student chooses. However, students are obligated to take the exam in the language which the survey has covered that year. The exam consists of a choice of six of eight passages, and students are allowed three hours. A grade of 'B-' or higher, on every passage, is required to pass. If a student does not attain a 'B-', s/he must retake the exam later in the summer before registering for the Autumn Quarter, in order to continue in the program. The exam can only be retaken once.
 - b) Students must pass modern language translation exams in both German and French; Italian or modern Greek may be substituted in place of French, with consent of the graduate director. Students arrange with the student services officer to take the exam. One modern language exam must be completed by the end of the first year, the other by the end of the second year. These examinations are administered at the beginning of each quarter but can only be retaken once.
 - c) At the beginning of Autumn Quarter of the third year, students take general examinations in four of the following fields: Greek literature, Latin literature, ancient philosophy, Greek history, and Roman history. Students select the fields in consultation with the graduate director no later than June of the second year of graduate study. Candidates must have taken at least one course at Stanford in each of the chosen fields (in the case of ancient philosophy, a seminar or its equivalent); students need to confer with the professor overseeing the exam. General examinations must be taken by October of the third year.
 - d) the University oral examination, which is a defense of the candidate's dissertation.
4. The graduate director assigns a dissertation proposal director to each candidate who has passed the general examination. During the third year, the candidate, in consultation with the dissertation proposal director, prepares a dissertation proposal which is examined by the dissertation proposal defense committee (set up by the dissertation proposal director and consisting of the dissertation proposal director and two other faculty members, one of whom may be from outside the department), no later than the end of the first quarter of the fourth year. If the proposal is deemed unsatisfactory, this proposal examination is repeated in the following quarter and must be passed. Subsequently, each candidate, in consultation with the graduate director and the dissertation proposal director, selects a dissertation director who must be a member of the Academic Council. The candidate, the dissertation director, and the graduate committee collaborate to select an appropriate dissertation reading committee. Two of the three members of the reading committee, including the chair, must be members of the Academic Council.
5. All students are required to undertake the equivalent of four one-quarter courses of teaching under department supervision. This teaching requirement is normally completed during the second and third years of study.
6. A typical program for a graduate student in Classics is as follows. First year: CLASSLAT 275A,B (6 units), CLASSGRK 275A,B (6 units), CLASSGEN 205A,B, Semantics (3 units), either CLASSGEN 207A-C or 208A-C, Literature Survey (offered alternate years; 15 units), and three elective seminars (12-15 units). Second year: either CLASSGEN 207A-C or 208A-C, Literature Survey (offered alternate years) (15 units), five to nine elective seminars (20-45 units), and one to three Teaching Assistantships (9-27 units). Third year: three to eight elective seminars (12-40 units), one to three Teaching Assistantships (9-27 units). Fourth year: three quarters of predoctoral dissertation research assistantship (30 units).

II. Classical Archaeology—All candidates for the Ph.D. degree in Classics with a specialty in Classical Archaeology must fulfill the following requirements:

1. Complete 135 units of academic credit or equivalent in study beyond the bachelor's degree at the end of the candidate's fourth year.
2. These must include:
 - a) at least three graduate (200) level courses in Latin and/or Greek literature
 - b) History of Classical Archaeology (CLASSART 201), to be taken as early as possible in the candidate's Stanford career
 - c) the interdepartmental graduate core sequence in archaeology. The Archaeology Center announces the courses which fulfill this requirement. The core sequence currently comprises a seminar in archaeology theory and a course on archaeological methods.
 - d) at least one further course outside the Classics department
 - e) at least five graduate seminars in classical archaeology
 - f) at least three graduate seminars in ancient history
 - g) Students may petition to count independent study courses in place of up to two required courses, but no more.
 - h) Students who enter the program with only one ancient language at the level needed for graduate study are strongly encouraged to take additional course work to reach graduate (200 and above) level in another language.
 - i) Students are urged to enroll in or audit other undergraduate courses that may fill gaps in their undergraduate training
 - j) All students are expected to take part in archaeological fieldwork in the classical world areas.
 - k) At least three consecutive quarters of course work must be taken at Stanford.
3. Examinations:
 - a) As soon as students arrive, they must take a diagnostic exam in either Greek or Latin. Depending on performance, students may be required to enroll in undergraduate language classes in that language to improve their skills to the level required for graduate work.
 - b) reading examinations in two of the following languages: French, German, Italian, and modern Greek. Candidates may petition to substitute a different modern language for one of these, if their area of specialization requires it. Candidates must satisfy this requirement by the end of the second year. These examinations are administered at the beginning of each quarter but can only be retaken once.
 - c) a translation examination from Latin or Greek into English. This examination must be taken either at the end of the first year or at the end of the second year. A grade of 'B-' or higher on every passage is required to pass. If a student does not attain a 'B-', s/he must retake the exam later in the summer before registering for Autumn Quarter, in order to continue in the program. The exam can only be retaken once.
 - d) general examinations in Greek archaeology and Roman archaeology, and two of the following fields: Greek literature, Latin literature, ancient philosophy, Greek history, Roman history. Candidates select the fields in consultation with the graduate director no later than the first week of Spring Quarter of the second year of graduate study. Candidates must have taken at least one course at Stanford in each of the chosen fields (in the case of ancient philosophy, a seminar or its equivalent). General examinations must be taken by October of the third year.
 - e) the University oral examination, which is a defense of the candidate's dissertation.
4. The graduate director assigns a dissertation proposal director to each candidate who has passed the general examination. During the third year, the candidate, in consultation with the dissertation proposal director, prepares a dissertation proposal which is examined by the dissertation proposal defense committee (set up by the dissertation proposal director and consisting of the dissertation proposal director and two other faculty members, one of whom may be from outside the department), no later than the end of the first quarter of the fourth

year. If the proposal is deemed unsatisfactory, this proposal examination is repeated in the following quarter and must be passed. Subsequently, each candidate, in consultation with the graduate director and the dissertation proposal director, selects a dissertation director who must be a member of the Academic Council. The candidate, the dissertation director, and the graduate committee collaborate to select an appropriate dissertation reading committee. Two of the three members of the reading committee, including the chair, must be members of the Academic Council.

5. All students are required to undertake the equivalent of four, one quarter courses of teaching under department supervision. This teaching requirement is normally completed during the second and third years of study.

III. Ancient History—All candidates for the Ph.D. degree in Classics with specialty in Ancient History must fulfill the following requirements:

1. Complete 135 units of academic credit or equivalent in study beyond the bachelor's degree at the end of the fourth year. This includes:
 - a) in the Autumn Quarter of the first year, Approaches to History (HISTORY 304), offered in the History department
 - b) two proseminars. These introduce students to primary sources of evidence for ancient history that require special training: papyrology, epigraphy, paleography, numismatics, and archaeology. The department should offer one each year, but students may also fulfill this requirement by doing a directed reading, or (with the approval of the ancient history track adviser) by taking a course at another university with which Stanford has an exchange agreement.
 - c) three skills courses relevant to the individual student's chosen research approach. For example, a student could take classes in economics, demography, legal history, or anthropology. The skills courses can also be used to learn other ancient or modern languages, either by course work or directed reading. Students need to consult with their advisers and the graduate director.
 - d) 10 graduate seminars: These normally have course numbers in the 300s. Most of these are taken in the department, but students may also take seminars outside the department or at another university with which Stanford has an exchange agreement. Approval from the ancient history adviser and the graduate director must be obtained prior to exercising this option. While only two of the ten seminars can be replaced by directed readings, up to three additional seminars may be taken outside the department. This leaves five ancient history seminars that must be chosen from those in the department. Other Classics graduate seminars may be substituted for these ancient history seminars, with approval of the ancient history track adviser.
 - e) The range and sequence of other courses to be taken depend on which of the following two options the student selects within the Ancient History track.
 1. *Option 1*: Students focus more on one language. This requires students to take: the three quarter survey course in either Greek or Latin (CLASSGEN 207A,B,C or CLASSGEN 208 A,B,C); the fifteen-week syntax course in the same language (CLASSGEN 275A,B or CLASSLAT 285A,B); one quarter of the survey course sequence in the other language; and the two quarter Semantics of Grammar sequence (CLASSGEN 205A,B).
 2. *Option 2*: Students emphasize broader linguistic skills. This requires students to take the three quarter survey sequence in both Greek and Latin (CLASSGEN 207A,B,C and 208A,B,C).
- 2 Examinations:
 - a) As soon as students arrive, they take diagnostic exams in two areas of ancient history. Choices are: Egyptian, Greek, and Roman history. The test is mainly on narrative history, especially important names, dates, and events. Depending on performance, students may be asked to sit in on the undergraduate history courses and take directed reading or a graduate survey if offered. Reading lists are available upon request.
 - b) Students must take the final offered at the end of each quarter of Greek or Latin survey (for Option 1 above) or both Greek and Latin

- surveys (for Option 2 above). Students must earn a 'B-' or higher on each final to pass.
- c) Students must pass modern language translation exams in both German and French; Italian or modern Greek may be substituted in place of French with consent of the graduate director. One exam must be completed by the end of the first year and the other by the end of the second. These examinations are administered at the beginning of each quarter but can only be retaken once.
 - d) General examinations: Students must take two exams in history (Egyptian, Greek, or Roman) and two exams in other fields (Greek literature, Latin literature, Greek archaeology, Roman archaeology, or ancient philosophy). Students select the fields in consultation with the graduate director no later than June of their second year of graduate study. Candidates must have taken at least one course at Stanford in each of the chosen fields (in the case of ancient philosophy, a seminar or its equivalent). General examinations must be taken by October of the third year. In preparing for the general examinations, candidates are expected to make full use of relevant secondary material in modern languages. They should therefore plan to satisfy the requirements in French and German as soon as possible, preferably before the translation examinations. Except in very special circumstances, candidates may not take the general examinations until the modern language requirements have been completed.
 - e) the University oral examination which is a defense of the candidate's dissertation.
3. The graduate director assigns a dissertation proposal director to each candidate who has passed the general examination. During the third year, the candidate, in consultation with the dissertation proposal director, prepares a dissertation proposal which is examined by the dissertation proposal defense committee (set up by the dissertation proposal director and consisting of the dissertation proposal director and two other faculty members, one of whom may be from outside the department), no later than the end of the first quarter of the fourth year. If the proposal is deemed unsatisfactory, this proposal examination is repeated in the following quarter and must be passed. Subsequently, each candidate, in consultation with the graduate director and the dissertation proposal director, selects a dissertation director who must be a member of the Academic Council. The candidate, the dissertation director, and the graduate committee collaborate to select an appropriate dissertation reading committee. Two of the three members of the reading committee, including the chair, must be members of the Academic Council.
 4. All candidates are required to undertake the equivalent of four, one quarter courses of teaching under department supervision. This teaching requirement is normally completed during the second and third years of study.

IV. Joint Program in Ancient Philosophy—This track is jointly administered by the Departments of Classics and Philosophy and is overseen by a joint committee composed of members of both departments. It provides students with the training and specialist skills and knowledge needed for research and teaching in ancient philosophy while producing scholars who are fully trained as either philosophers or classicists.

Graduate students admitted by the Classics Department receive their Ph.D. from the Classics Department with a specialization in philosophy. This specialization includes training in both ancient and modern philosophy. Each student in the program is advised by a committee consisting of one professor from each department.

All candidates for the Ph.D. degree in Classics with specialty in Ancient History must fulfill the following requirements:

1. Complete 135 units of academic credit or equivalent in study beyond the bachelor's degree at the end of the fourth year. This includes:
 - a) all the requirements listed for the Language and Literature track in the graduate program in Classics (see "I" above).
 - b) three courses in the Philosophy department (including 100/200 and two courses at the 200 level or higher). These include:
 1. one course in logic which can be fulfilled at any level
 2. one course in aesthetics, ethics, or political philosophy

- 3 one course in metaphysics, epistemology, philosophy of mind, or philosophy of science.
 - c) at least three courses in ancient philosophy at the 200 level or above, one of which must be in the Philosophy department.
 - d) All of the courses taken in the Philosophy department count for seminar credit (i.e. as contributing to the 12 seminar requirement in the Language and Literature track in the Classics department).
2. Examinations: The requirements are the same as those listed in the Language and Literature track, except that one of the four areas of general examination must be taken in ancient philosophy.
 3. The graduate director assigns a dissertation proposal director to each candidate who has passed the general examination. During the third year, the candidate, in consultation with the dissertation proposal director, prepares a dissertation proposal which is examined by the dissertation proposal defense committee (set up by the dissertation proposal director and consisting of the dissertation proposal director and two other faculty members, one of whom may be from outside the department), no later than the end of the first quarter of the fourth year. If the proposal is deemed unsatisfactory, this proposal examination is repeated in the following quarter and must be passed. Subsequently, each candidate, in consultation with the graduate director and the dissertation proposal director, selects a dissertation director who must be a member of the Academic Council. The candidate, the dissertation director, and the graduate committee collaborate to select an appropriate dissertation reading committee. Two of the three members of the reading committee, including the chair, must be members of the Academic Council.
 4. All students are required to undertake the equivalent of four, one quarter courses of teaching under department supervision. This teaching requirement is normally completed during the second and third years of study.

PH.D. MINOR

For a graduate minor, the department recommends at least 20 units in Latin or Greek at the 100 level or above, and at least one course at the graduate (200) level.

CLASSICS AND A MINOR FIELD

The Ph.D. in Classics may be combined with a minor in another field, such as anthropology, history, humanities (see below), or classical linguistics (see below). Requirements for the minor field vary, but might be expected to involve about six graduate-level courses in the field and one written examination, plus a portion of the University oral exam. Such a program is expected to take five years. The department encourages such programs for especially able and well prepared students and is normally able to offer one fellowship each year to support a student in the fifth year of a combined program. The following timetable would be typical for a five-year program:

First Year: course work, almost entirely in Classics. One translation exam taken in June. One or both modern language exams taken.

Second Year: course work, both in Classics and the minor field. Second translation exam completed. French and German exams completed.

Third Year: course work, both in Classics and the minor field. General examinations in Classics.

Fourth Year: remaining course work, both in Classics and the minor field.

General examination in the minor field. Preparation for dissertation.

Fifth Year: dissertation, University oral examination.

GRADUATE PROGRAM IN HUMANITIES

The Department of Classics participates in the Graduate Program in Humanities leading to the joint Ph.D. degree in Classics and Humanities. For a description of that program see the "Interdisciplinary Studies in Humanities" section of this bulletin.

COMPARATIVE LITERATURE

The Department of Classics cooperates closely with the graduate program in the Department of Comparative Literature. Interested students should consult the chair of the department.

COURSES

WIM indicates that the course satisfies the Writing in the Major requirements.

Students interested in literature and literary studies should also consult course listings in the departments of Asian Languages, Comparative Literature, English, French and Italian, German Studies, Slavic Languages and Literatures, and Spanish and Portuguese, in the Program in Modern Thought and Literature, and in the Division of Literatures, Cultures, and Languages.

For courses in modern Greek language with the subject code SPEC-LANG, see the "Language Center" section of this bulletin.

INTRODUCTION TO THE HUMANITIES (IHUM)

The following Introduction to the Humanities courses are taught by Classics department faculty members. IHUM courses are typically available only to freshmen seeking to fulfill GER:1 requirements; see the "Introduction to the Humanities" section of this bulletin for further information. Prospective majors in Classics are advised to consider satisfying their GER:1b,c requirements by registering for the following IHUM courses.

IHUM 31A,B. Ancient Empires—A decisive place and period in world history: Mediterranean basin from 800 B.C. to 400 A.D. Great empires (Assyria, Persia, Macedonia, and Rome) were carved out in bloody wars and permanently changed the course of human development. Why did these empires arise when and where they did, how did they work, and what is their legacy? Their economic, religious, and artistic achievements are balanced against their records of genocide, enslavement, and brutal warfare by examining the rich evidence surviving from ancient literature and archaeology, and tracing the roles of religion, property, and freedom across these centuries, and what they mean for the shape of the world today. GER:1b,1c (two quarter sequence)

IHUM 31A. 5 units, Win (Morris)

IHUM 31B. 5 units, Spr (Scheidel)

GREEK

UNDERGRADUATE

Students whose major work is in another department and who wish to fulfill a departmental foreign language requirement by taking Greek should consult their department advisers to determine the precise nature of that department's requirements.

Courses in Greek have the subject code CLASSGRK. Classics majors and minors must take courses for letter grade.

CLASSGRK 1,2,3. Beginning Greek: Attic Prose—The language of Attic prose, leading to reading of passages from Plato and other authors of the classical period. No previous knowledge of Greek is assumed. Classics majors and minors must take course for letter grade.

5 units, 1: Aut, 2: Win, 3: Spr (B. Rogers)

CLASSGRK 10. Intensive Beginning Greek—Equivalent to CLASSGRK 1, 2, and 3. Goal is to read easy classical or New Testament Greek by the end of the quarter. Short readings in philosophical Greek. Classics majors and minors must take course for letter grade.

8-9 units, Sum (Staff)

INTERMEDIATE/ADVANCED

Students are admitted to these courses by completing Greek 3 or 10, or on the basis of previous work done in secondary school or elsewhere. Usually two to three years of secondary school Greek qualifies a student for 101, three to four years for 111. Students with previous knowledge of Greek should consult the Undergraduate Director in Classics to determine the course for which they are best suited.

Students whose major work is in another department and who wish to fulfill a departmental foreign language requirement by taking Greek should consult their department advisers to determine the precise nature of that department's requirements. Most departments are satisfied if part of the series 101, 102, 103 is completed.

CLASSGRK 101. Intermediate Greek: Athenian Oratory—The art of legal and political speechmaking in Athens during the 5th and 4th centuries B.C.E. Historical and cultural background, rhetorical technique, and review of vocabulary and syntax.

5 units, Aut (Ahern)

CLASSGRK 102. Intermediate Greek: Tragedy—One play of Aeschylus, Sophocles, or Euripides is chosen each year for reading and analysis with attention to questions of poetics, dramatic structure, theatrical performance, myth, and history. Classics majors and minors must take course for letter grade.

5 units, Win (Fischer)

CLASSGRK 103. Intermediate Greek: Homer—Selections from the *Iliad*. Focus is on reading Homeric poetry with fluency and rapid comprehension. Style, meter, poetic techniques, and cultural background. Classics majors and minors must take course for letter grade.

5 units, Spr (Koo)

CLASSGRK 111. Advanced Greek: Lyric Poetry—Invectives, love songs, drinking songs, elegies, and choral odes from 700-500 B.C.E. Readings include Sappho, Alcaeus, Archilochus, Solon, and Alcman. Classics majors and minors must take course for letter grade.

3-5 units, Aut (Butler)

CLASSGRK 112. Advanced Greek: Prose, Thucydides—The style and language in which the themes of community crisis and empire were first turned into history by this master of Athenian prose. Classics majors and minors must take course for letter grade.

3-5 units, Win (Ceserani)

CLASSGRK 113. Advanced Greek: Plato—Introduction to the style and language of one of the masters of Greek prose. Readings from dialogues; attention paid to philosophical issues and literary techniques. Classics majors and minors must take course for letter grade.

3-5 units, Spr (Gladhill)

CLASSGRK 116. Plato's Ethics—(Enroll in PHIL 108/208.)

4 units, Spr (Moravcsik)

CLASSGRK 175A,B/275A,B. Greek Syntax: Prose Composition—(First-year graduate students register for 275A,B.) The nuances of Greek syntax and style, stylistic analysis of prose authors, techniques of sight translation, and writing idiomatic Greek prose. Begins the 5th week of Winter Quarter and continues through the end of Spring Quarter. Prerequisite for undergraduates: three years of Greek. Classics majors and minors must take course for letter grade.

2 units, A: Win (5 weeks), 4 units, B: Spr (Lain)

LATIN

UNDERGRADUATE

Students whose major work is in another department and who wish to fulfill a departmental foreign language requirement by taking Latin should consult their department's advisers to determine the precise nature of those requirements. Most departments are satisfied if part of the series 101, 102, 103 is completed.

Courses in Latin have department prefix CLASSLAT.

CLASSLAT 1,2,3. Beginning Latin: Vocabulary and Syntax—Vocabulary and syntax of the classical language, preparing students for readings including Cicero, Caesar, and Catullus. No previous knowledge of Latin is assumed. Classics majors and minors must take course for letter grade.

5 units, 1: Aut, 2: Win, 3: Spr (Kelly)

CLASSLAT 10. Intensive Beginning Latin—Equivalent to CLASSLAT 1, 2, 3; or 51 and 52. Goal is to read easy Latin prose and poetry by the end of the quarter. Classics majors and minors must take course for letter grade.

8-9 units, Sum (Staff)

INTERMEDIATE/ADVANCED

Students are admitted to these courses by completing Latin 3 or 10, or on the basis of previous work done in secondary school or elsewhere. Usually two to three years of secondary school Latin qualifies a student for 101, three to four years for 111. Students with previous knowledge of Latin should consult the Undergraduate Director in Classics to determine the course for which they are best suited. Students whose major work is in another department and who wish to fulfill a departmental foreign language requirement by taking Latin should consult their department's advisers to determine the precise nature of those requirements. Most departments are satisfied if part of the series 101, 102, 103 is completed.

CLASSLAT 101. Intermediate Latin: Poetry and Prose—Readings introducing major literary genres and figures of the period, including Ennius, Plautus, Lucretius, Cicero, and Catullus. Classics majors and minors must take course for letter grade.

5 units, Aut (*Gladhill*)

CLASSLAT 102. Intermediate Latin: Literature of the Empire—Selections from two major writers of the Empire, drawn from the *Satyrica* and Seneca's *Letters*. Classics majors and minors must take course for letter grade.

5 units, Win (*M. Myers*)

CLASSLAT 103. Intermediate Latin: Horace—A study of the poet's full range of compositions, including epodes, satires, epistles, and odes, with literary and historical analysis. Classics majors and minors must take course for letter grade.

5 units, Spr (*Ahern*)

CLASSLAT 111. Advanced Latin: Livy—Preface and selections of exemplary episodes, battle scenes, and speeches with stylistic analysis in relation to Livy's practices of history and its reception. Classics majors and minors must take course for letter grade.

3-5 units, Aut (*Folch*)

CLASSLAT 112. Advanced Latin: Vergil—Extensive selections from the *Aeneid*; its literary, artistic, and cultural background. Classics majors and minor must take course for letter grade.

3-5 units, Win (*Barchiesi*)

CLASSLAT 113. Advanced Latin: Elegiac Poetry—The new genre of love elegy as practiced by Propertius, Ovid, and Tibullus, with its antecedents and related forms in classical literature. Classics majors and minors must take course for letter grade.

3-5 units, Spr (*Myers*)

CLASSLAT 175A,B/275A,B. Latin Syntax—(First-year graduate students register for 275A,B.) Intensive review of Latin syntax. Begins Autumn Quarter and continues through the 5th week of Winter Quarter. Prerequisite for undergraduates: three years of Latin. Classics majors and minors must take course for letter grade.

4 units, **A:** Aut, 2 units, **B:** Win (5 weeks) (*Devine*)

CLASSLAT 175T/275T. Tutorial for Latin Syntax—(First year graduates register for 275T.)

1 unit, Aut, Win (5 weeks) (*Devine*)

GRADUATE

These courses have department prefix CLASSGEN.

CLASSGEN 205A,B. The Semantics of Grammar—Supplements CLASSLAT/CLASSGRK 275. Introduction to the grammatical encoding of semantic and pragmatic meaning. 205A: morphology-semantics interface (gender, tense, aspect, case). 205B: syntax-pragmatics interface (Latin word order).

3 units, **A:** Aut, **B:** Win (*Devine*)

CLASSGEN 207A,B,C/208A,B,C. Survey of Greek and Latin Literature—Required two-year sequence focusing on the origins, development, and interaction of Greek and Latin literature, history, and philosophy. Greek and Latin material are taught in alternate years. Some

of these courses may be continued the following quarter by arrangement with the instructor. This usually requires the writing of an extended research paper based on work directly related to the course.

CLASSGEN 207A. Republican Latin

4-5 units, Aut (*Braund*)

CLASSGEN 207B. Augustan Age

4-5 units, Win (*Barchiesi*)

CLASSGEN 207C. Imperial Latin

4-5 units, Spr (*Stephens*)

CLASSGEN 208A. Archaic Greek

4-5 units (Staff) alternate years, given 2005-06

CLASSGEN 208B. Classical Greek

4-5 units (Staff) alternate years, given 2005-06

CLASSGEN 208C. Greek Philosophy and Rhetoric

4-5 units (Staff) alternate years, given 2005-06

COURSES IN TRANSLATION**UNDERGRADUATE**

These courses have the subject code CLASSGEN.

CLASSGEN 12. Greek Tragedy—The tragedies produced in 5th-century Athens are a seminal moment in the history of human creativity. Introduction to the range and depth of Greek tragedy. Twelve plays by Aeschylus, Sophocles, and Euripides are studied with Aristotle's *Poetics* and Aristophanes' *Frogs*. Emphasis is on the power and complexity of the poetry, the connections to 5th-century social and political issues, and the performance conditions and conventions of the ancient theater. GER:3a

3-5 units, Aut (*McCall*)

CLASSGEN 18. Greek Mythology—The heroic and divine in the literature, mythology, and culture of archaic Greece. Interdisciplinary approach to the study of individuals and society. Illustrated lectures. Readings in translation of Homer, Hesiod, Herodotus, and the poets of lyric and tragedy. GER:3a

3-5 units, Aut (*Hunt*)

CLASSGEN 27N. The Invention of Travel, Ancient and Modern—Stanford Introductory Seminar. Preference to freshmen. The discovery of the New World imperiled the authority of ancient Greek and Roman travel accounts and their outdated geography. New uses for the ancient accounts such as defining primitive people; modern discoveries which inspired archaeological explorations of the ancient Mediterranean. How much is new and old in a travel experience? Are tourists a modern or ancient invention? Readings include Homer, Herodotus, 18th-century Jesuits, and archaeological texts and images. GER:3a

4-5 units, Spr (*Ceserani*)

CLASSGEN 28N. Philosophy and Literature—Stanford Introductory Seminar. (Same as COMPLIT 28N.) Preference to freshmen. Literary and philosophic wisdom examined using authors including classical Greek tragedians, Plato, Nietzsche, Dostoevsky, Heidegger, and Beckett. Different conceptions of human nature and ethical life offered by literature and philosophy: how do these understandings characterize the meaning of life; and what is at a stake in the ancient quarrel between philosophy and literature? What power does reason have over the irrational? How do emotions and passions contribute to ethical wisdom? GER:3a

3-5 units, Spr (*Nightingale*)

CLASSGEN 29. Olympics: the Striving, the Spirit, and the Politics of Athletic Competition—The Olympic Games, their organization, and meaning. The philosophy of Panhellenic peace, city-state cooperation, and competition as central to their philosophy. Athletic events include footraces, horse and chariot races, javelin, discus, wrestling, pancratia, and boxing. Comparison of modern Olympics with the ancient games. Monuments and topography, including Nemea, Isthmia, and Delphi. Sources include archaeology and ancient texts.

3-5 units (Staff) not given 2004-05

CLASSGEN 66. Herodotus—Emphasis is on reading the work and analyzing its structure and historical method. For Ancient History majors; others by consent of instructor. Recommended: knowledge of Greek. GER:3a

3-4 units (Staff) not given 2004-05

CLASSGEN 114. Economy and Economics of Ancient Greece—(Enroll in ECON 114.)

5 units (Staff) not given 2004-05

CLASSGEN 117. Gender, Violence, and the Body in Ancient Religion—The sex-gender system of ancient Greece. How did polarization of the sexes become a master metaphor for power struggles between husbands and wives, among men, and among parts of the self? How did religious activity, including drama, mitigate or intensify the stresses of living in a society polarized along gender lines? GER:3a,4c

3-4 units, Win (Stephens)

CLASSGEN 176. Majors Seminar: Representing Women in Antiquity—The decisive role of the women of Greece and Rome, despite being deprived of political participation, in cultural affairs and discourses created by men. How women are represented in visual arts, poetry, philosophy, and historiography, and how this affects understanding of ethical, aesthetic, and social consciousness. GER:3a,WIM

3-5 units, Win (Peponi)

CLASSGEN 181/281. Introduction to Coptic II—(Graduate students register for 281.) Continuation of 180/280. Review of Sahidic grammar. Focus is on reading Sahidic and Coptic texts. Prerequisite: 180.

3-4 units, Win (Manning)

CLASSICS/HISTORY

These courses have the subject code CLASSHIS.

CLASSHIS 21N. Roman Scandals: Representations and Perceptions of Rome—Stanford Introductory Seminar. Ancient and modern constructions of Roman morality and immorality. Representations of Rome in 18th- through 20th-century literature, art, and movies, compared against evidence from the ancient texts in English. GER:3a

3-5 units, Win (Braund)

CLASSHIS 22N. Ancient and Modern Slavery—Stanford Introductory Seminar. Preference to freshmen. Greeks and Romans created the largest slave societies in premodern history. How did slavery shape classical civilization and define perceptions of human nature; how does it compare to later slave systems? Focus is on comparison of ancient and modern slavery. GER:3a

3-5 units, Spr (Scheidel)

CLASSHIS 40. The Glory That Was Greece, in Modern Europe—What does it mean to be a modern European? The relationship between a modern European and a classical Greek; how Greece has been reimagined. Sources include ancient authors, modern travelers, and historians, French and American revolutionary debates, archaeological images, and contemporary visuals. GER:3a

4-5 units, Win (Ceserani)

CLASSHIS 60. The Romans—How did a tiny village create a huge empire and shape the world, and why did it fail? Roman history, imperialism, politics, social life, economic growth, and religious change. GER:3a

3-5 units, Win (Scheidel)

CLASSHIS 101. The Greeks—Greek history from the palaces of the late Bronze Age through Alexander the Great's conquest of Persia, surveying the economics, society, culture, and technology. Why Greek culture combined unusual freedom for ordinary men with large-scale chattel slavery and extreme gender ideologies; the origins and practices of democracy; and relations with non-Greek peoples. Focus is on original ancient sources and archaeological remains. GER:3a

4-5 units, Aut (Morris)

CLASSHIS 105. History and Culture of Ancient Egypt—From 3000-30 B.C.E. Emphasis is on longterm social and economic development. GER:3a,4a

3-5 units, Spr (Manning)

CLASSHIS 131. Science and Technology in Ancient Egyptian Society—From 3000 B.C.E. to the Roman period. What was the source of technological change and innovation in Egypt? Why is the ancient Egyptian legacy important for later developments? What was the balance between changes internal and external to Egypt? Topics: ancient texts concerned with science, technology, mathematics, astronomy, medicine; Egyptian material culture and building techniques; the economic role of technology; Alexandrian science and its legacy.

4 units, Win (Manning)

CLASSHIS 151. Western Greeks: Colonization and Cultural Encounters in the Ancient Mediterranean—From the 8th century B.C., Greeks established settlements in southern Italy known as Magna Graecia. What stories did the Greeks tell about why and how this happened, and what explanations are given today? What shape did encounters with local cultures take, from the Lucanians to the expanding Roman Empire? How did the politics, culture, and art of Magna Graecia differ from those of mainland Greece? Sources include textual and archaeological material, postcolonialism and ethnicity studies, and older interpretative frameworks. GER:3a

3-5 units (Staff) not given 2004-05

CLASSICS, ART/ARCHAEOLOGY

Courses in Classical Art and Archaeology have the subject code CLASSART.

CLASSART 21Q. Eight Great Archaeological Sites in Europe—Stanford Introductory Seminar. Preference to sophomores. Focus is on excavation, features and finds, arguments over interpretation, and the place of each site in understanding the archaeological history of Europe. Goal is to introduce the latest archaeological and anthropological thought, and raise key questions about ancient society. The archaeological perspective also foregrounds interdisciplinary study: geophysics articulated with art history, source criticism with analytic modeling, statistics with more open forms of interpretation. A web page with key resources about each site, including plans, photographs, video, and publications, is the basis for exploring. GER:3a

3-5 units, Aut (Shanks)

CLASSART 42. Pompeii—The Roman town of Pompeii, buried by the eruption of Mt. Vesuvius in 79 C.E., provides information about the art and archaeology of ancient social life, urban technology and production, and ancient spatial patterns and experience. Its fame illustrates modern relationships to the ancient past, from Pompeii's importance on the Grand Tour, to plaster casts of vaporized bodies, to debates about reconstruction, preservation, and archaeological methods. GER:3a

3-4 units (Staff) not given 2004-05

CLASSART 61. Archaeology of the Greek World—From the collapse of the Bronze Age palaces to the conquests of Alexander the Great. How material culture helps reconstruct ancient Greek society. Why did the Greeks build temples? What was the influence of the Near East on Greek culture? Archaeology and class, gender, and ethnic relations? Is there an archaeology of Greek democracy? Complements ARTHIST 101, CLASSHIS 101, 102.

3-5 units, Win (Jackman)

CLASSART 81. Introduction to Roman Archaeology—The Roman past, 8th century B.C.E. to 5th century C.E., interpreted through its material remains including imperial palaces, temples, provincial towns, and garbage pits. Material evidence throws light on key areas of Roman life and history: cultural identity, economics, religion, ancient state formation, the emperor's image, sex and gender, Roman encounters with non-Romans, and military life. Relationship between literary and archaeological evidence. Sites include Rome, Pompeii, Athens, Ephesus,

Vindolanda and Hadrian's Wall, Palmyra and the provinces of Africa, Asia Minor, Britain, and Gaul.

3-5 units, *Spr* (Platt)

CLASSART 101/201. Archaic Greek Art—(Graduate students register for 201; same as ARTHIST 101/301.) The development of Greek art and culture from protogeometric beginnings to the Persian Wars, 1000-480 B.C.E. The genesis of a native Greek style; the orientaling phase during which contact with the Near East and Egypt transformed Greek art; and the synthesis of East and West in the 6th century B.C.E. GER:3a

4 units, *Aut* (Maxmin)

CLASSART 102/202. Classical and 4th-Century Greek Art—(Graduate students register for 202; same as ARTHIST 102/302.) The formation of the classical ideal in 5th-century Athenian art, and its transformation and diffusion in the 5th and 4th centuries against changing Greek history, politics, and religion. GER:3a

4 units, *Win* (Maxmin)

CLASSART 111/211. Performance, Place, and the Past—For students interested in contemporary arts. Interdisciplinary treatment of memory, cultural identity, and performativity. What constitutes a sense of place? How do memories attach to places? What are the relationships among landscape, experience, and identity? Answers sought through contemporary performance practice and theory; also archaeology, human geography, history, anthropology, folklore, and literature studies. Themes of location and time in cultural practices where art meets theater: installation, conceptual, minimalist, site-specific, and land art since the 60s, including artists such as John Cage, Robert Smithson, and the Brith Gof theater.

4-5 units, *Spr* (Shanks)

CLASSART 112/212. Ancient Urbanism—How to understand the ancient city. Archaeologists and anthropologists have focused on urban origins and ideas of civilization, to understand the emergence of social complexity in social ranking, control of resources, and the organization of production, trade, and exchange. Focus is on the early city as it was perceived, understood, lived in its own time. Cities studied: Ur in Sumeria, Tell El Amarna in Egypt, Athens in Greece, and ancient imperial Rome.

4-5 units, *Spr* (Shanks)

CLASSART 113/213. Science, Technology, and Culture: The Design of Ten Artifacts—(Same as STS 112.) How does design work? Connections among science, technology, society, and culture by looking at: a palaeolithic hand axe; the pyramids at Giza; an ancient Greek perfume jar; a medieval castle; a Wedgwood china teapot; an electric light bulb; a computer mouse; a Sony Walkman; a supersonic aircraft; and the BMW Mini. Interdisciplinary perspectives include archaeology, cultural anthropology, science, history and sociology of technology, cognitive science, and evolutionary psychology.

4-5 units, *Spr* (Shanks)

CLASSART 126. Alpine Archaeology—What distinguishes archaeological research in high mountain environments with year-round cold temperatures from other archaeological contexts and fieldwork? Comparison with other global field methodologies. Emphasis is on Gallo-Roman, Celtic, and medieval finds. Required for students participating in Stanford's late summer dig in the Grand-St-Bernard pass in the Alps. GER:3a

3-5 units, *Spr* (Hunt)

CLASSART 150/250. Archaeological Field Work in the Mediterranean—(Graduate students register for 250.) Required for students taking part in Stanford's excavation at Monte Polizzo, Sicily. The history and archaeology of Sicily from 1000 B.C.E. to the present. Excavation techniques and recording system in use at Monte Polizzo. GER:3a

3 units, *Spr* (Jackman)

INDIVIDUAL STUDY

CLASSGEN 160. Directed Readings (Undergraduate)

1-15 units, *Aut, Win, Spr, Sum* (Staff)

CLASSGEN 199. Undergraduate Thesis: Senior Research

1-6 units, *Aut, Win, Spr, Sum* (Staff)

CLASSGEN 260. Directed Reading in Classics (Graduate Students)

1-15 units, *Aut, Win, Spr, Sum* (Staff)

CLASSGEN 360. Dissertation Research in Classics

10 units, *Aut, Win, Spr, Sum* (Staff)

GRADUATE SEMINARS

Graduate seminars vary each year. The following are given this year.

GENERAL (CLASSGEN)

CLASSGEN 215. Ancient Asceticism: Self-Improvement Practices in Greek, Roman, and Jewish Belief Systems—Greeks, Romans, and Jews found different ways to engage in disciplined effort toward the goal of spiritual perfection. For some, it was a matter of philosophy, a process of detachment, and training the mind and emotions. Others used physical training and deprivation of the body to enhance the capacities of the soul. What ancient people were looking for when they engaged in disciplines of self-improvement, and how they put their beliefs into practice. GER:3a

4 units (Staff) not given 2004-05

CLASSGEN 301. Hellenistic Poetry—Introduction to the poetic achievement of Hellenism. Focus is on questions about narrative as a frame, and the introduction of new elements into earlier poetic narrative techniques. Topics include: contamination of genres, the quintessential mark of the Hellenistic; intertextuality with respect to previous lyric and Latin poetry; *aition*, foundation stories in politics and religion; poetry books; and epigrammatic narrative based on the new papyrus find of Posidippus of Pella.

4-5 units, *Aut* (Stephens)

CLASSGEN 317. The Professional Classicist—Autumn Quarter offering recommended for first- and second-year students; Spring for students doing dissertations. Autumn Quarter focus is on how to develop a line of research interest, keep up with current literature, and write reviews, abstracts, and grant proposals; also pedagogy and professional ethics. Spring Quarter focus is on the dissertation: finding and developing a topic, the ethics of citation and acknowledgement, and structuring the writing day.

3-5 units, *Aut, Spr* (Gleason)

CLASSGEN 321. Classical Seminar—(Same as HUMNTIES 321.) The dialogue between literature and philosophy in Greek and Roman cultures. Homer, Greek tragedy, Plato, Lucretius, Virgil, and Augustine; Nietzsche's *Birth of Tragedy* and Walcott's *Omeros*.

3-5 units, *Win* (Nightingale)

CLASSGEN 324. Choral Poetry and Performance—Representative readings of choral lyric poetry. Interpretation of the most complex choral discourse developed in archaic and classical Greece. The cultural context in which choral performances took place in the Greek *polis*.

4-5 units, *Spr* (Peponi)

CLASSGEN 326. The Rhetoric of Eros: Plato and Augustine—Plato's *Phaedrus* and Augustine's *Confessions* emphasizing sexuality, textuality, memory, time, and narrative. Ancient and modern theoretical approaches. Recommended: knowledge of Greek or Latin.

4-5 units, *Aut* (Nightingale)

CLASSGEN 327. Seneca's Tragedies and Their Influence—Two plays in Latin and several in English. Emphasis is on Seneca's influence on English, American, and French dramatists such as Shakespeare, Jonson, Webster, Corneille, Racine, O'Neill, and Sarah Kane.

4-5 units, *Aut* (Braund)

HISTORY (CLASSHIS)

CLASSHIS 290. Social and Economic History of the Ancient Near East—Most cuneiform records are administrative and economic documents. Topics include: demography and the process of urbanization; stratification and mobility; economic life, production, trade, and transport; subsistence economy; state, temple, and private property relations; distribution, rations and taxation; standard of living, prices, and wages; and social and economic reforms and the beginning of economic policy.
4-5 units, Spr (Vargyas)

CLASSHIS 302. Hellenization—How the western Mediterranean changed from 800-300 B.C.E. focusing on concept formation, cross-cultural comparison, levels of determination, and the limits of textual and archaeological data. 18th-century Hellenist theories that Greek culture spread after the 8th century B.C.E. to form the basis of European civilization. Hellenization as crucial to narratives of European identity. How 19th- and 20th-century nationalism complicated attitudes toward Greek ruins. Postcolonial critiques of the 90s. Recent challenges to assumptions of classical scholarship; how indigenous agency, hybridity, and the Phoenicians emerged as research areas in Classics. Readings in French, Italian, Spanish, and English.
4-5 units, Win (Morris)

CLASSHIS 303. The Logic of Ancient History—How do ancient historians know what happened in the past? Focus is on assumptions about the logic of historical justification including narrative, falsification, counterfactual propositions, evolutionism, and postmodernism. The assumptions ancient historians make, the relationships between arguments and evidence, and internal logic of historical truth claims. Readings focus on studies by ancient historians.
4-5 units, Aut (Morris)

CLASSHIS 305. Ancient Numismatics—Graduate proseminar. Basic skills course required for ancient history graduate students; others by consent of instructor. Focus is on Greek and Roman coinage and monetary history; related material from the ancient Near East and Europe.
4-5 units, Win (Scheidel)

CLASSHIS 306. Before Disciplining Classics: Antiquity in the 18th Century—Foundational works, such as Winckelmann, Gibbon, Wolf, Hume, and French philosophers, in their original political, cultural, and scholarly contexts.
4-5 units, Spr (Ceserani)

CLASSHIS 311. Egypt from the Saites to the Romans—Emphasis is on connections of Egypt to the Mediterranean world emphasizing political events and socioeconomic developments. Prerequisite: consent of instructor.
4-5 units, Spr (Manning)

**COMMUNICATION**

Emeriti: (Professors) Henry S. Breitrose, Richard A. Brody; *(Professors, Teaching)* Ronald Alexander, Marion Lewenstein, James Risser
Chair: Shanto Iyengar
Director, Institute for Communication Research: James Fishkin
Director, John S. Knight Fellowships for Professional Journalists: James R. Bettinger
Director, Documentary Film and Video: Kristine M. Samuelson
Director, Journalism: Theodore L. Glasser
Deputy Director, John S. Knight Fellowships for Professional Journalists: Dawn E. Garcia
Professors: James Fishkin, Theodore L. Glasser, Shanto Iyengar, Jan Krawitz, Jon Krosnick, Clifford Nass, Byron B. Reeves, Donald F. Roberts, Kristine M. Samuelson
Assistant Professors: Jeremy Bailenson, Frederick Turner
Professor (Teaching): James R. Bettinger
Lecturers: Jeffrey Friedman, Dawn E. Garcia, Lisa Henriksen, John Markoff, James Wheaton
Visiting Professors: James Curran, David Weir, William Woo
Department Offices: McClatchy Hall, Building 120, Room 101
Mail Code: 94305-2050
Phone: (650) 723-1941
Web Site: <http://communication.stanford.edu>

Courses given in Communication have the subject code COMM. For a complete list of subject codes, see Appendix.

The Department of Communication engages in research in communication and offers curricula leading to the B.A., M.A., and Ph.D. degrees. The M.A. degree prepares students for careers in journalism or documentary film and video. The department also offers students who are completing a B.A. in another department, a coterminal program with an M.A. emphasis in Media Studies. The Ph.D. degree leads to careers in university teaching and research-related specialties.

The Institute for Communication Research offers research experience primarily to advanced Ph.D. students.

The John S. Knight Fellowships program brings outstanding mid-career journalists to the University to study for an academic year. The John S. and James L. Knight Foundation sponsors twelve U.S. journalists. They are joined by seven International Fellows sponsored by the Shinyoung Journalism Fund, the Lyle and Corrine Nelson International Fellowship Fund, the Knight Foundation, the Hearst Foundation, the Fulbright Program, the Koura Foundation, and others.

ADMISSION

Prospective Undergraduate Students—Write to the University's Office of Undergraduate Admissions, Stanford University, Stanford, California 94305-3005.

Prospective Coterminal Students—Applications are available online at <http://registrar.stanford.edu/publications/#Coterm>.

Prospective Graduate Students—Write to Graduate Admissions, Registrar's Office, 520 Lasuen Mall, Old Union, Stanford University, Stanford, CA 94305-3005. Online applications are strongly preferred and can be submitted on the web at <http://gradadmissions.stanford.edu>.

The department requires that applicants for graduate admission submit verbal and quantitative scores from the Graduate Record Examination (GRE). Admission to each graduate degree program is competitive, based on the pool of applicants each year rather than on standard criteria that can be stated in advance. The GRE should be taken no later than early November prior to the mid-December application deadline.

UNDERGRADUATE PROGRAMS

BACHELOR OF ARTS

PREPARATION

Before declaring the major, students must have completed or be currently enrolled in one of the following:

COMM 1
COMM 106
COMM 108

Students interested in declaring the major should see the peer advisors or the student services administrator in Building 120, Room 110A during scheduled office hours.

PROGRAM OF STUDY

The undergraduate curriculum is intended for liberal arts students who wish to develop a fundamental understanding of communication in society, drawing on the perspective of the social sciences. Undergraduate students majoring in communication are expected to become acquainted with the fundamental concerns, theoretical approaches, and methods of the field, and to acquire advanced knowledge in one or more of the subareas of communication institutions, processes, and effects.

While the department does not attempt to provide comprehensive practical training at the undergraduate level, the curriculum provides a diverse range of internship opportunities including professional print journalism, some of which are funded by the department's prestigious Rebele Internship Program.

The department is committed to providing students with the analytical and critical skills that are necessary for future success, be it in graduate programs, professional schools, or immediate career entry.

The major is structured to provide several levels of study: a core curriculum, intended to expose students to a broad-based understanding of communication theory and research, and a number of intermediate-level options and electives. Majors also have the opportunity to do advanced research in the form of senior projects and honors theses.

All undergraduate majors are required to complete a set of core communication courses which include COMM 1, Media Technologies, People, and Society (5 units); COMM 120, Digital Media in Society (WIM, 5 units); COMM 106, Communication Research Methods (5 units); and COMM 108, Media Processes and Effects (5 units). Core courses are given only once each year.

The department also requires completion of or concurrent registration in an introductory statistics course (STATS 60 or PSYCH 10) prior to registration in COMM 106, Communication Research Methods, in preparation for courses in methodology and advanced courses in communication processes and effects. It is recommended that this be done as soon as possible so as not to prevent registration in a course requiring statistical understanding.

In addition to the core courses and the statistics requirement, undergraduate majors select courses from the areas described below. Many of the courses require core courses as prerequisites.

Area I: Communication Processes and Effects—Area I emphasizes the ways in which communication scholars conduct research in, and consider the issues of, human communication. These studies aim to provide expert guidance for social policy makers and media professionals. A minimum of two courses must be taken from COMM 160, 162, 169, 170, 172.

Area II: Communication Systems/Institutions—Area II considers the roles and interaction of institutions such as broadcasting, film, journalism, constitutional law, and business within communication and mass communication contexts. A minimum of two courses must be taken from COMM 116, 120, 122A or B, 125, 131, 133, 136, 138, 141A or B.

Tracks—The communication curriculum is designed to provide a theoretical base that can be effectively applied to numerous environments. The potential tracks listed below are not required, but are examples of how to focus your interests.

1. Communication Technologies
 - a) Department of Communication (COMM):
 120. Digital Media in Society
 169. Computers and Interfaces: Psychology and Design
 172. Psychological Processing of Media
 - b) Affiliated department offerings (elective credit toward the major):
 - 1) Computer Science (CS)
 105. Introduction to Computers
 - 106A. Programming Methodology
 147. Introduction to HCI
 201. Computers, Ethics, and Social Responsibility
 - 247A. Interaction Design Studio
 - 2) Science, Technology, and Society (STS)
 101. Science, Technology, and Contemporary Society
2. Communication and Public Affairs
 - a) Department of Communication (COMM)
 125. Perspectives on American Journalism
 133. Communication and Culture
 136. Democracy and the Communication of Consent
 138. Democratic Theory
 160. The Press and the Political Process
 162. Analysis of Political Campaigns
 170. Communication and Children
 - b) Affiliated department offerings (elective credit toward the major)
 - 1) Department of Political Science (POLISCI)
 123. Politics and Public Policy
 126. Issues of Representation in American Politics
 - 2) Department of Psychology (PSYCH)
 75. Cultural Psychology
 167. Seminar on Aggression
 180. Social Psychological Perspectives on Stereotyping and Prejudice
 - 3) Public Policy Program (PUBLPOL)
 104. Economic Policy Analysis
 194. Technology Policy
3. Media Practices and Performance
 - a) Department of Communication (COMM)
 120. Digital Media in Society
 - 122A or B. The Documentary Tradition
 125. Perspectives on American Journalism
 131. Media Ethics and Responsibilities
 - 141A or B. Film History
 160. The Press and the Political Process

The remainder of the 60 required units may be fulfilled with any elective communication courses, or crosslisted courses in other departments.

To be recommended for the B.A. degree in Communication, the student must complete at least 60 units (approximately twelve courses) in the department. No more than 10 units of transfer credit or Summer Session may be applied to meet department requirements. Communication majors must receive a letter grade for all communication courses unless they are offered only for satisfactory/no credit (S/NC).

Internship Opportunities—Internship credit is available for Communication majors and minors. For those interested in internships, select "Internships" at <http://communication.stanford.edu>. Communication students who have received academic credit for internship experience through COMM 185 have prepared reports which are available in the department's Mendenhall Library.

MINORS

PREPARATION

Before declaring the minor, students must have completed or be currently enrolled in one of the following:

COMM 1
COMM 106
COMM 108

Students interested in declaring the minor should apply via Axess. Students are required to take at least 40 units (approximately 8 courses), not counting statistics, to complete the minor.

PROGRAM OF STUDY

The minor is structured to provide a foundation for advanced course work in communication through a broad-based understanding of communication theory and research.

The minor in Communication consists of three introductory Communication core courses that include 1, Media Technologies, People, and Society (5 units); 106, Communication Research Methods (5 units); and 108, Media Processes and Effects (5 units).

In addition to the three core courses, the minor requires a minimum of five intermediate-level elective courses in the department. The department also requires completion of or concurrent registration in an introductory statistics course (STATS 60 or PSYCH 10) prior to registration in COMM 106, Communication Research Methods. It is strongly recommended that the course in statistics be taken as early as possible, preferably in the Autumn Quarter of the junior year. The Statistics course does not count toward the 40 units to complete the communication minor.

Students interested in declaring a minor must do so no later than registration day in the Autumn Quarter of the junior year. Core courses are offered only once annually, and they constitute a sequence:

Prerequisite: introductory statistics course (for example, PSYCH 10)

Core Courses: COMM 1, 106, 108

Area I, Communication Processes and Effects: a minimum of one course from COMM 160, 162, 169, 170, 172

Area II, Communication Systems and Institutions: a minimum of one course from COMM 116, 120, 122A or B, 125, 131, 133, 136, 138, 141A or B
Plus three elective courses

Some courses are not given every year. Refer to program handout and the *Time Schedule* for details.

HONORS PROGRAM

The honors program provides undergraduates the opportunity to undertake a significant program of research in an individual professor/student mentoring relationship. The aim is to guide students through the process of research, analysis, drafting, rethinking, and redrafting, which is essential to excellence in scholarship. Working one-on-one with a faculty adviser, seniors earn 15 Communication units, culminating in an honors thesis. In order to be eligible for the honors program, interested majors must have: (1) successfully completed both a research methods and statistics course, (2) selected an adviser, and (3) submitted an application to the department by the end of their junior year. An application may be picked up outside Room 110, Building 120.

Students are expected to make steady progress on their honors thesis throughout the year. Students who fail to submit a satisfactory draft Autumn Quarter will be dropped from the program.

A final copy of the honors thesis must be read and approved by the adviser and submitted to the department by the eighth week of Spring Quarter (exact date to be arranged). It becomes part of a permanent record held by the department. Honors work may be used to fulfill communication elective credit but must be completed and a letter grade submitted prior to graduation. A student failing to fulfill all honors requirements may still receive independent study credit for work completed and it may be applied toward fulfilling major requirements.

The designation "graduation with honors" is awarded by the Department of Communication to those graduating seniors who, in addition to having completed all requirements for the Communication major:

1. complete an honors thesis
2. maintain a distinguished grade point average (GPA) in all Communication course work
3. are recommended by the Communication faculty

COTERMINAL BACHELOR'S AND MASTER'S PROGRAM

The Department of Communication offers students who are completing a B.A. in another department, a coterminal program with an M.A. emphasis in Media Studies (see "Media Studies Program" below for more information); applications can be accessed online at <http://registrar.stanford.edu/pdf/CotermApplic.pdf>.

Applications for coterminal study must be submitted at least four quarters in advance of the expected master's degree conferral date. Applicants must have earned a minimum of 120 units toward graduation (UTG) as shown on the undergraduate unofficial transcript. This includes allowable advanced placement (AP) and transfer credit. Applications may be submitted no later than December 14, 2004 for admission beginning in either Winter or Spring Quarter 2004-05 or Autumn Quarter 2005-06. There is no rolling admission in the Communication department. Requirements include: Application for Admission to Coterminal Master's Program form, preliminary program proposal, statement of purpose, three letters of recommendation from Stanford professors, and a current Stanford transcript. GRE scores are not required. Coterminal applications are submitted directly to the department. Review procedures and the Graduate Admissions Committee determine criteria.

For University coterminal degree program rules and University application forms, see <http://registrar.stanford.edu/publications/#Coterm>.

GRADUATE PROGRAMS**MASTER OF ARTS**

University requirements for the master's degree are described in the "Graduate Degrees" section of this bulletin.

The department awards terminal M.A. degrees in Journalism and Documentary Film/Video. Applicants for each program, and for doctoral work, are evaluated for admission on different criteria. A student may complete more than one M.A. degree in the department, but course work applied to the requirements for one M.A. degree may not be applied to a second. All work to fulfill graduate degree requirements must be in courses numbered 100 or above.

Students who complete an M.A. degree and who desire entry into the Ph.D. program must file a Graduate Program Authorization Petition application that can be picked up at the Registrar's Information Windows in the lobby of Old Union. Such students are considered alongside all other doctoral applicants.

The M.A. degree in Media Studies is only available to current Stanford University undergraduates who are majoring in another department. See more information on subsequent pages for additional description.

DOCUMENTARY FILM AND VIDEO

The graduate program in documentary film and video is a master's program designed to train students in the conceptual and craft skills for the production of nonfiction film and video.

The program requires continuous enrollment for a period of two academic years (6 quarters), with a completion date of June in the second year. Students proceed through the program as a cohort. The program does not allow for a leave of absence.

The specific curriculum is listed in the following paragraphs. Full tuition (\$9,949 per quarter for the 2004-05 year) is charged for each quarter of the first year. During the Autumn Quarter of the second year, tuition is charged at the 10-unit rate (\$6,480). For the Winter and Spring quarters, tuition is charged at the 7-unit rate (\$4,536). However, due to BCIS regulations, international students are required to register and pay for 8 units of tuition during Winter Quarter of the second year in order to remain in-status with regard to their student visa.

CURRICULUM

The curriculum is project-based and is intended to teach the technical and conceptual skills required for the development of creative work as well as relevant historical and theoretical knowledge.

First-Year Curriculum 2004-05

Autumn Quarter

- 202A. Graduate Colloquium in Documentary
- 222B. Contemporary Issues in Documentary
- 223. Film/Video Writing & Directing
- 224. Introduction to Film Production

Winter Quarter

- 202B. Graduate Colloquium in Documentary
- 228. Digital Video
- Elective 1 (3-5 units)
- Elective 2 (3-5 units)

Spring Quarter

202C. Graduate Colloquium in Documentary
229. Advanced Film Production
232. Advanced Documentary Directing
Elective (3-5 units)

Second-Year Curriculum 2005-06

Autumn Quarter

202A. Graduate Colloquium in Documentary
222A. The Documentary Tradition
292. Producing the Nonfiction Film

Winter Quarter

202B. Graduate Colloquium in Documentary
293A. M.A. Project Seminar I

Spring Quarter

202C. Graduate Colloquium in Documentary
293B. M.A. Project Seminar II

ELECTIVES

The student is required to take three electives in the first year. A list of possible electives is distributed toward the end of Autumn Quarter. Elective courses may be drawn from Department of Communication offerings or other departments with courses relevant to the curriculum. Some courses are not offered every year, and there may be time conflicts with core courses. Students should consult the University Time Schedule each quarter for current information. All elective choices must be approved by the Program Director.

All electives that fulfill graduation requirements must be taken for a letter grade. A student may opt to take an elective whose content supports the anticipated subject of the M.A. project in the Spring Quarter of the first year. The student must submit a petition to the documentary faculty requesting permission to take this course and indicate how the course is relevant to his/her research.

EQUIPMENT AND SUPPLIES

The department maintains film and video production facilities and equipment for teaching and research purposes. However, the costs of supplies and laboratory services are the responsibility of the students.

Material costs are approximately \$1,200 for the first year of residence. In the second year, costs vary depending on subject, format/length, and logistics, but \$1,500-7,000 is typically the range for an M.A. project.

M.A. PROJECT

In the second year of the program, each student individually produces an M.A. project that consists of a 15-20 minute film or video documentary.

Students own their own work, but the department reserves the right to use student projects for non-profit University-related purposes.

In order to graduate, students must deposit with the faculty adviser a DVCam master, one VHS copy of their film or video project, and a revised final budget that reflects the projected and actual cost of their production. In the case of film, the master copy must be made once the film is printed and, in the case of video, the submaster must be made from the online master. Students must contact the department's student services administrator during the quarter in which they expect to graduate in order to determine what needs to be done to file for graduation. Students working in film may not have completed their final printing work prior to the end of the Spring Quarter. It is therefore possible for a student to officially graduate in the Summer Quarter immediately following their enrollment in COMM 293B, although they will not have access to faculty or facilities during this period. No extensions or leaves of absence are granted.

All M.A. projects must be completed by the end of the Spring Quarter of the second year. In order to graduate, the student (1) must complete online editing and final sound sweetening; and (2) must procure all license agreements and permissions for copyrighted music and archival material. The M.A. projects are screened for the public during Saturday of Commencement weekend.

JOURNALISM

Stanford's Graduate Program in Journalism focuses on the knowledge and skills required to report, analyze, and write authoritatively about public issues. The curriculum combines a sequence of specialized reporting and writing courses with seminars and courses devoted to deepening the students' understanding of the roles and responsibilities of American news media in their coverage of public issues.

The program emphasizes both rigorous preparation for the practice of journalism as well as a critical perspective from which to understand it. The program's objective, then, is twofold: (1) to graduate talented reporters and writers who will foster public understanding of the significance and consequences of public issues and the debates they engender; and (2) to graduate thoughtful journalists who will respond openly and eloquently when called on to explain and defend the methods of their reporting and the quality of their writing.

CURRICULUM

The curriculum includes seven required courses and a master's project:

- 216. Journalism Law
- 217. Digital Journalism
- 225. Perspectives on American Journalism
- 244. Democracy, the Press, and Public Opinion
- 273. Public Issues Reporting I
- 274. Public Issues Reporting II
- 289. Journalism M.A. Project
- 291A,B,C. Graduate Journalism Seminar

Additionally, students are required to take two specialized writing courses, typically one each during Winter and Spring quarters; one or two approved electives from among graduate-level courses in the Department of Communication; and one or two approved electives from among courses on campus that deal substantively with issues of public importance. The M.A. degree in Communication (Journalism) requires a minimum of 48 units.

A typical schedule follows:

Autumn Quarter 2004

- 216. Journalism Law
- 225. Perspectives on American Journalism
- 273. Public Issues Reporting I
- 291. Graduate Journalism Seminar
- Elective

Winter Quarter 2005

- 217. Digital Journalism
- 274. Public Issues Reporting II
- 277. Specialized Reporting/Writing
- 291. Graduate Journalism Seminar
- Elective

Spring Quarter 2005

- 244. Democracy, the Press and Public Opinion
- 277. Specialized Reporting/Writing
- 289. Journalism M.A. Project
- 291. Graduate Journalism Seminar
- Elective

Except for the Graduate Journalism Seminar and the Journalism Project, all courses must be taken for a letter grade. To remain in good academic standing, students must maintain a grade point average (GPA) of 3.0 or better. Graduation requires a GPA of 3.0 or better.

JOURNALISM PROJECT

The master's project, a requirement for graduation, is intended as an opportunity for students to showcase their talents as writers and reporters. It is also an opportunity to undertake an in-depth critique of an area of journalism in which the author has a special interest. Work on the project usually begins during the Winter Quarter and continues through the Spring Quarter. It represents a major commitment of time, research, and writing. Although it is not a requirement that the project be published, it must be judged by a member of the faculty to be of a quality acceptable for publication. At a minimum, the project should demonstrate the rigor and discipline required of good scholarship and good journalism; it should offer ample evidence of students' ability to gather, analyze, and synthesize information in a manner that goes beyond what ordinarily appears in daily newspapers.

MEDIA STUDIES

The Media Studies coterminal master's program provides a broad introduction to scholarly literature in mass communication. This one-year program is designed for current Stanford students without prior academic work in communication, who wish academic preparation for teaching.

Media Studies students need to satisfy four basic requirements:

1. *Required Units and GPA*: students must complete a minimum of 45 units in Communication and related areas, including items 2 and 3 below. Normally a grade point average (GPA) of 3.0 or better satisfies the requirement for high academic standing. To count toward the 45 units, all courses must be taken for a letter grade, if offered, and courses in related areas outside the department must be approved by the student's adviser.
2. *Core Requirements*: students must complete COMM 206, 208, and a statistics course. Typically, the statistics requirement is met with STATS 160 or 190. Other courses occasionally are approved as a substitute before the student is admitted to the program. The Statistics course does not count toward the 45 units.
3. *Six Media Studies Courses*: students must complete a minimum of 6 additional communication courses from the following list of department courses concerned with the study of media. While the department also offers graduate-level courses teaching media-related skills (e.g., COMM 273 or 277), these courses are intentionally excluded from the list. Not all the listed courses are offered every year and the list may be updated from one year to the next. However, its intent is to include only courses in media studies, not media skills. In addition to the core requirements and a minimum of 6 courses listed below, students may select additional courses from the list and any related course approved by the student's adviser.
 - 211. Media Technologies, People, and Society
 - 216. Journalism Law
 - 217. Digital Journalism
 - 220. Digital Media in Society
 - 222A. The Documentary Tradition
 - 225. Perspectives on American Journalism
 - 231. Media Ethics and Responsibility
 - 236. Democracy and the Communication of Consent
 - 238. Democratic Theory
 - 260. The Press and the Political Process
 - 262. Analysis of Political Campaigns
 - 266. Virtual People
 - 268. Experimental Research in Advanced User Interfaces
 - 269. Computers and Interfaces: Psychology and Design
 - 270. Communication and Children
 - 272. Psychological Processing of Media
 - 280. Film Criticism
 - 314. Doctoral Research Methods IIB*
 - 318. Doctoral Research Methods II*
 - 319. Doctoral Research Methods III*
4. *Two Extensive Projects*: students complete projects in two of the required communication courses listed in item 3 above. The projects requirement is intentionally flexible to permit students to adjust it to their interests, in consultation with professors.
 - a) Each project must grow out of a Communication course the student has taken.
 - b) Projects must be supervised by a faculty member, typically the professor who taught the course that inspired the project (but not necessarily the student's adviser for the Media Studies program). Only a faculty member, not a Ph.D. student, can approve a topic and supervise a paper.

* These courses are designed for Ph.D. students. Master's students are unlikely to be admitted to take them, but the final decision is up to the faculty.

Additional courses are selected in consultation with an academic adviser. A course in statistical methods is strongly recommended.

DOCTOR OF PHILOSOPHY

University requirements for the Ph.D. are described in the "Graduate Degrees" section of this bulletin. The minimum number of academic units required for the Ph.D. at Stanford is 135, up to 45 of which can be transferred either from a master's degree at the University or from another accredited institution.

The department offers a Ph.D. in Communication Theory and Research. First-year students are required to complete introductory courses in communication theory and research, research methods, and statistics. These core courses, grounded in the social science literature, emphasize how people respond to media and how media institutions function. In addition, Ph.D. students must complete a minimum of three literature survey courses and related advanced seminars in Communication. Students also take significant course work outside the department in their area of interest. Each student builds a research specialty relating communication to current faculty interests in such areas as ethics, human-computer interactions, information processing, information technology, law, online communities, politics and voting, virtual reality, and youth and media. Regardless of the area of specialization, the Ph.D. program is designed primarily for students interested in university research and teaching or other research or analyst positions.

The Ph.D. program encompasses four years of graduate study (subsequent to completion of the B.A. degree) during which, in addition to fulfilling University residency requirements, Ph.D. candidates are required to:

1. Complete all departmental course requirements with grades of 'B+' or above. Currently these courses include COMM 206, 208, 311, 314 or 318, 317, and 319. Students are also required to take two quarters of statistics or one quarter of statistics and an advanced methods course.
2. Pass the general qualifying examinations by the end of the second academic year of study and pass a specialized area examination by the end of the third academic year of study.
3. Demonstrate proficiency in tools required in the area of research specialization. Identified with the advice of the faculty, such tools may include detailed theoretical knowledge, advanced statistical methods, computer programming, a foreign language, or other technical skills.
4. Complete at least two pre-dissertation research projects (the Major Project and the Complementary Project).
5. Teach or assist in teaching at least two courses, preferably two different courses, at least one of which is ideally a core undergraduate course (COMM 1, 106, and 108).
6. Complete a dissertation proposal and proposal meeting approved by the dissertation committee.
7. Apply for candidacy by the end of the second year of graduate study. The requirements and procedures for applying for candidacy can be found in the document, "Official Rules and Procedures for the Ph.D. in the Department of Communication," available from the student services administrator of the department.
8. Complete a dissertation satisfactory to a reading committee of three or more faculty members in the Department of Communication and one faculty member not in the Department of Communication.
9. Pass the University oral examination, which is a defense of the dissertation.

Because the multifaceted nature of the department makes it possible for the Ph.D. student to specialize in areas that draw on different related disciplines, the plan of study is individualized and developed between the faculty adviser and the student.

Ph.D. candidacy is valid for five years.

Other requirements and details of the requirements can be found in the document, "Official Rules and Procedures for the Ph.D. in the Department of Communication," available from the student services administrator of the department.

PH.D. MINOR

Candidates for the Ph.D. degree in other departments who elect a minor in Communication are required to complete a minimum of 20 units of graduate courses in the Department of Communication, including a total of three theory or research methods courses, and are examined by a representative of the department. A department adviser in consultation with the individual student determines the particular communication theory and methods courses.

THE INSTITUTE FOR COMMUNICATION RESEARCH

The Institute is an office of project research for the faculty of the Department of Communication and operates under grants to faculty from government, industry, and non-profit organizations. Research assistantships are often available to qualified Ph.D. students in Communication.

COURSES

WIM indicates that the course satisfies the Writing in the Major requirements.

PRIMARILY FOR UNDERGRADUATES

COMM 1. Media Technologies, People, and Society—(Graduate students register for 211.) Open to non-majors. Introduction to the fundamental concepts and contexts of communication. A topics-structured orientation emphasizing the field and the scholarly endeavors represented in the department. GER:3b

4-5 units, Aut (Nass)

COMM 104. Reporting, Writing, and Understanding the News—Basic techniques of news reporting and writing. The value and role of news in democratic societies. GER:3b

5 units, Aut (Weir)

COMM 106. Communication Research Methods—(Graduate students register for 206.) Conceptual and practical concerns underlying commonly used quantitative approaches (experimental, survey, content analysis, and field research) in communication. GER:3b

4-5 units, Win (Henriksen)

COMM 108. Media Processes and Effects—(Graduate students register for 208.) The process of communication theory construction, including a survey of social science paradigms and major theories of communication. Recommended: 1 or PSYCH 1. GER:3b

4-5 units, Win (Roberts)

COMM 109. Research Practicum in Media Effects—May be repeated for credit. Topic and instructor change each year. Prerequisite 108 or consent of instructor.

3 units, Spr (Roberts)

COMM 112N. Media Violence: What is it? How does it affect people?—Stanford Introductory Seminar. Concerns of educators, social critics, and parents about violence portrayed in media and potential negative effects of exposure to symbolic violence. Increases in these with the introduction of each successive new medium: movies, television, music videos, computers, and video games. Whether and how media violence affects audience beliefs, attitudes, and behavior. Should anything should be done about it?

4 units, Spr (Roberts)

COMM 116. Journalism Law—(Undergraduate section; see 216.)

4-5 units, Aut (Wheaton)

COMM 117. Digital Journalism—(Undergraduate section; see 217.)

4-5 units, Win (Turner)

COMM 118Q. Theories of Film Practices—Stanford Introductory Seminar. Preference to sophomores. How theory connects with practice in the production of film and television. Film and television from the perspectives of practitioners who have theorized about their work in directing, editing, screenwriting, cinematography, and sound, and social scientists whose research has explored similar issues empirically.

4 units, Win (Breitrose)

COMM 120. Digital Media in Society—(Graduate students register for 220.) Contemporary debates concerning the social and cultural impact of digital media. Topics include the historical origins of digital media, the cultural contexts of their development and use, and the influence of digital media on our conceptions of self, community, and state. GER:3b,WIM

4-5 units, Spr (Turner)

COMM 122A. The Documentary Tradition—(Graduate students register for 222A.) The evolution of the documentary idea, as evidenced in the ideas and work of film makers, from the late 19th century until 1960. Prerequisite: consent of instructor. GER:3b

4-5 units (Breitrose) not given 2004-05

COMM 122B. Contemporary Issues in Documentary—(Graduate students register for 222B.) Issues in contemporary documentary film/video including objectivity/subjectivity, ethics, censorship, representation, reflexivity, responsibility to the audience, and authorial voice. The viewing and analysis of films has a parallel focus on form and content. Prerequisite: consent of instructor. GER:3b

4-5 units, Aut (Krawitz) alternate years, not given 2005-06

COMM 125. Perspectives on American Journalism—(Graduate students register for 225.) Survey of issues, ideas, and concepts in the development of American journalism, emphasizing the role of the press in society, the meaning and nature of news, and professional norms that influence conduct in and outside of the newsroom. Prerequisite: 1 or junior standing. GER:3b

4-5 units, Aut (Glasser)

COMM 131. Media Ethics and Responsibilities—(Graduate students register for 231.) The development of professionalism among American journalists, emphasizing the emergence of objectivity as a professional and the epistemological norm. An applied ethics course where questions of power, freedom, and truth autonomy are treated normatively so as to foster critical thinking about the origins and implications of commonly accepted standards of responsible journalism. GER:3b

4-5 units, Spr (Glasser)

COMM 135. Survey Research Methods: Describing Large Populations with Small Samples and Precise Measures—The science of survey methodology and the principles of optimal survey design. Comparative study designs (cross-sections versus panels); sampling techniques; modes of data collection (face-to-face, telephone, paper, Internet); designing questions to accurately measure behavior, attitudes, and personality; data collection procedures; data processing and analysis; reporting results; ethics of surveys; causal inference with surveys; and approaches to critiquing surveys. GER:3b

5 units (Krosnick) not given 2004-05

COMM 136. Democracy and the Communication of Consent—(Graduate students register for 236.) Focus is on competing theories of democracy and the forms of communication they presuppose, combining normative and empirical issues, and historical and contemporary sources. Topics include representation, public opinion, mass media, small group processes, direct democracy, the role of information, and the prospects for deliberative democracy. GER:3b

4-5 units, Aut (Fishkin)

COMM 138. Democratic Theory: Normative and Empirical Issues—(Graduate students register for 238.) Focus is on conflicting visions in terms of normative conflicts and empirical evidence. How citizens communicate with each other and their representatives, and how their representatives deliberate. Topics include theories of deliberation, how democracy is transformed when it is brought to the mass public, how informed a public is needed, and potential pathologies of small group communication in settings including juries, town meetings, and contemporary public consultations. Readings include Madison, Burke, Mill, Lippmann, Dewey, Schumpeter, Dahl, Sunstein, and Mansbridge. GER:3b

4-5 units (Fishkin) not given 2004-05

COMM 160. The Press and the Political Process—(Graduate students register for 260; same as POLISCI 323R.) Analysis of the role of mass media and other channels of communication in political and electoral processes. GER:3b

4-5 units, Aut (Iyengar)

COMM 162 Analysis of Political Campaigns—(Graduate students register for 262; same as POLISCI 323S.) Seminar. The evolution of American political campaigns, and the replacement of the political party by the mass media as intermediary between candidates and voters.

Academic literature on media strategies, the relationship between candidates and the press, the effects of campaigns on voter behavior, and inconsistencies between media campaigns and democratic norms. Do media-based campaigns enable voters to live up to their civic responsibility? Has the need for well-financed campaigns increased the influence of elites over nominations? Have citizens become disengaged? GER:3b
4-5 units (*Iyengar*) not given 2004-05

COMM 165. Mass Media Economics and Policy—(Enroll in PUBLPOL 172.)
4-5 units, *Aut* (*Owen*)

COMM 166. Virtual People—(Graduate students register for 266.) Topics include defining the concept of virtual people or digital human representations, methods of constructing and using virtual people, methodological approaches to interactions with and among virtual people, and current applications. Multidisciplinary including popular culture (how virtual people are defined in literature and film), engineering (how virtual people are constructed), behavioral science (how actual people respond to virtual people), computer science (what types of algorithms drive the behaviors of virtual people), and communication (how virtual people change the way people interact with one another).
4-5 units, *Win* (*Bailenson*)

COMM 169. Computers and Interfaces—(Graduate students register for 269.) Interdisciplinary. User responses to interfaces and design implications of those responses. Theories from different disciplines illustrate responses to textual, voice-based, pictorial, metaphoric, conversational, adaptive, agent-based, intelligent, and anthropomorphic interfaces. Group design project applying theory to the design of products or services for developing countries. GER:3b
4-5 units, *Win* (*Nass*)

COMM 170. Communication and Children I—(Graduate students register for 270.) Developmental approach. How children use and process mass media, what information they obtain, and how their behavior is influenced by the media. Prerequisite: 1, PSYCH 1, or SOC 1. GER:3b
4-5 units (*Roberts*) not given 2004-05

COMM 172. Psychological Processing of Media—(Graduate students register for 272.) The literature related to psychological processing and the effects of media. Topics: unconscious processing; picture perception; attention and memory; emotion; the physiology of processing media; person perception; pornography; consumer behavior; advanced film and television systems; and differences among reading, watching, and listening. GER:3b
4-5 units, *Spr* (*Reeves*)

COMM 177A. Specialized Writing and Reporting: Commentary—(Same as 277A; see 277A.)
4-5 units, *Win* (*Woo*)

COMM 177F. Specialized Writing and Reporting: Literary Journalism—(Same as 277F; see 277F.)
4-5 units, *Win* (*Bettinger*)

COMM 177P. Specialized Writing and Reporting: Book Writing—(Same as 277P; see 277P.)
4-5 units (*Staff*) not given 2004-05

COMM 177R. Writing and Reporting: Covering Silicon Valley—(Same as 277R; see 277R.)
4-5 units, *Spr* (*Markoff*)

COMM 177T. Specialized Writing and Reporting: Journalism as Biography—(Same as 277T; see 277T.)
4-5 units, *Spr* (*Weir*)

COMM 180. Film Criticism—(Graduate students register for 280.) Practical and critical view of film. Readings consider models of artistic and literary criticism as points of comparison. Weekly reviews stress analysis of the films and lucid writing. Prerequisite: 101 or 141.
4-5 units, *Aut* (*Breitrose*)

COMM 185. Internship Experience—Professional experience in the media. Prerequisite: Communication major or minor.
1-4 units, *Aut, Win, Spr* (*Staff*)

COMM 190. Senior Project
5 units, *Aut, Win, Spr* (*Staff*)

COMM 195. Honors Thesis—Qualifies students to conduct communication research. Student must apply for department honors thesis program during Spring Quarter of junior year.
5 units, *Aut, Win, Spr* (*Staff*)

COMM 199. Individual Work—Students with high academic standing are permitted to undertake individual work.
1-5 units, *Aut, Win, Spr* (*Staff*)

PRIMARYLY FOR MASTER'S STUDENTS

COMM 202A,B,C. Graduate Colloquium in Documentary—Topics in film and television focusing mainly on production-related issues. Prerequisite: documentary film and video graduate student only. Must be taken each quarter of 6-quarter program.
1 unit, **A:** *Aut* (*Samuelson*), **B:** *Win* (*Krawitz*), **C:** *Spr* (*Friedman*)

COMM 206. Communication Research Methods—(Graduate section; see 106.)
4-5 units, *Win* (*Henriksen*)

COMM 208. Media Processes and Effects—(Graduate section; see 108.)
4-5 units, *Win* (*Roberts*)

COMM 211. Media Technologies, People, and Society—(Graduate section; see 1.)
4-5 units, *Aut* (*Nass*)

COMM 216. Journalism Law—(Undergraduates register for 116.) Law that journalists should know. Topics include constitutional principles and theoretical bases for the First Amendment, libel and privacy, rules and limitations on news gathering and protecting confidential sources, basics of the legal system, and conflicts between a fair trial and a free press. Old rules in new places: the Internet, copyright, and obscenity. Prerequisite: Journalism M.A. student or advanced Communication major.
4-5 units, *Aut* (*Wheaton*)

COMM 217. Digital Journalism—(Undergraduates register for 117.) Seminar and practicum. The implications of new media for journalists. Professional and social issues related to the web as a case of new media deployment, as a story, as a research and reporting tool, and as a publishing channel. Prerequisite: journalism M.A. student or consent of instructor.
4-5 units, *Win* (*Turner*)

COMM 220. Digital Media in Society—(Graduate section; see 120.)
4-5 units, *Spr* (*Turner*)

COMM 222A. The Documentary Tradition—(Graduate section; see 122A.)
4-5 units (*Breitrose*) not given 2004-05

COMM 222B. Contemporary Issues in Documentary—(Graduate section; see 122B.)
4-5 units, *Aut* (*Krawitz*) alternate years, not given 2005-06

COMM 223. Film/Video Writing and Directing—Emphasis is on conceptualizing and executing ideas for the production work done jointly with 224, covering all aspects of preproduction at an introductory level. Prerequisite: documentary film and video graduate student.
5 units, *Aut* (*Samuelson*)

COMM 224. Introduction to Film Production—Introduction to 16mm production techniques and concepts. Final project is a short film with a non-synchronous sound design, shot in 16mm black-and-white. Prerequisite: documentary film and video master's student.
5 units, *Aut* (*Krawitz*)

COMM 225. Perspectives on American Journalism—(Graduate section; see 125.)

4-5 units, Aut (Glasser)

COMM 226. Reconstructing Film Theory—Seminar. Current controversies in the theory of the documentary. Authors include Noel Carroll, Carl Plantinga, Leslie Woodhead, Trevor Ponck, and Robert Rosenstone. Topics: rhetoric of non-fiction, the border between factual and fictional, subjectivity and objectivity, truth claims, reflexivity, and the art documentary. Prerequisite: enrollment in M.A. Documentary Film program or consent of instructor.

3-4 units, Win (Breitrose)

COMM 228. Digital Video—Introduces the fundamentals of digital storytelling. Emphasis is on working with small format cameras, interviewing techniques, and nonlinear editing skills. Prerequisite: documentary film and video graduate student.

5 units, Win (Krawitz)

COMM 229. Advanced Film Production—Final quarter of professional training in motion picture production. Production of a short observational, sync-sound exercise, and a 5-7 minute documentary shot in 16mm film and edited on digital video. Techniques of visual storytelling and observational shooting. Prerequisite: documentary film and video graduate student.

5 units, Spr (Samuelson)

COMM 231. Media Ethics and Responsibilities—(Graduate section; see 131.)

4-5 units, Spr (Glasser)

COMM 232. Advanced Documentary Directing—For graduate students. Further examination of structure, emphasizing writing and directing the documentary. Practical training in fundraising and distribution. Prerequisites: 223, 228. Corequisite: 229.

5 units, Spr (Friedman)

COMM 236. Democracy and the Communication of Consent—(Graduate section; see 136.)

4-5 units, Aut (Fishkin)

COMM 236G. Democracy, Justice, and Deliberation—(For undergraduates and M.A. students; Ph.D. students, register for 336G.) Decision processes that make a normative claim to resolve questions of public choice, at any of these levels of choice: first principles, constitutions, public policies, or particular outcomes. Topics include democratic theory, the theory of justice and issues of deliberation in small groups, public consultations, conventions, juries, and thought experiments popular in contemporary political theory. Readings include Madison, Tocqueville, Mill, Marx, Rawls, Nozick, Ackerman, and Schudson. Preference to graduate students. Prerequisite: consent of instructor.

1-5 units (Fishkin) not given 2004-05

COMM 238. Democratic Theory: Normative and Empirical Issues—(Graduate section; see 138.)

4-5 units (Fishkin) not given 2004-05

COMM 239. Questionnaire Design for Surveys and Laboratory Experiments: Social and Cognitive Perspectives—The social and psychological processes involved in asking and answering questions via questionnaires for the social sciences; optimizing questionnaire design; open versus closed questions; rating versus ranking; rating scale length and point labeling; acquiescence response bias; don't-know response options; response choice order effects; question order effects; social desirability response bias; attitude and behavior recall; and introspective accounts of the causes of thoughts and actions.

4 units, Spr (Krosnick)

COMM 244. Democracy, Press, and Public Opinion—The democratic tradition provides conflicting visions of what a democracy is or might be, offering different views of the role of the press and citizens in engaging public issues. Focus is on democratic theory with empirical work on public opinion and the role of the media. Topics include

campaigns, the effects of new technology, competing strategies of public consultation, public journalism, and possibilities for citizen deliberation. Prerequisite: consent of instructor.

1-4 units, Spr (Fishkin)

COMM 245. Media Entertainment and Journalism: An International Perspective—(Same as 345; see 345.)

1-4 units, Win (Curran)

COMM 260. The Press and the Political Process—(Graduate section; see 160; same as POLISCI 323R.)

4-5 units, Aut (Iyengar)

COMM 262. Analysis of Political Campaigns—(Graduate section; see 162; same as POLISCI 323S.)

4-5 units (Iyengar) not given 2004-05

COMM 266. Virtual People—(Graduate section; see 166.)

4-5 units, Win (Bailenson)

COMM 268. Experimental Research in Advanced User Interfaces—(For undergraduates and M.A. students; Ph.D. students, register for 368.) Project-based course involves small groups designing and implementing an experiment concerning voice and agent user interfaces. Each group is involved in a different, publishable research project. Prerequisite: consent of instructor.

1-5 units, Spr (Nass)

COMM 269. Computers and Interfaces—(Graduate section; see 169.)

4-5 units, Win (Nass)

COMM 270. Communication and Children I—(Graduate section; see 170.)

4-5 units (Roberts) not given 2004-05

COMM 272. Psychological Processing of Media—(Graduate section; see 172.)

4-5 units, Spr (Reeves)

COMM 273. Public Issues Reporting I—Reporting and writing on government and public policies and issues; their implications for the people and the press. Required for journalism M.A. students.

4 units, Aut (Woo)

COMM 274. Public Issues Reporting II—Student teams study one major public policy issue that has broad societal impact. Students report and write individually; team produces a body of journalism that advances the understanding of a new issue each year, published on a web site and offered for publication to newspapers and other media outlets. Prerequisites: 273; journalism M.A. student.

4 units, Win (Weir)

COMM 277A. Specialized Writing and Reporting: Commentary—(Undergraduates register for 177A.) Opinion writing in the form of editorials, op-ed essays, and first person columns. Prerequisite: 104 or consent of instructor.

4-5 units, Win (Woo)

COMM 277F. Specialized Writing and Reporting: Literary Journalism—(Undergraduates register for 177F.) Using the tools of literature to tell the true stories of journalism. Characterization, narrative plotting, scene-setting, point of view, tone and style, and the techniques of reporting for literary journalism, interviewing, and story structure. Prerequisite: 104 or consent of instructor.

4-5 units, Win (Bettinger)

COMM 277P. Specialized Writing and Reporting: Book Writing—(Undergraduates register for 177P.)

4-5 units (Staff) not given 2004-05

COMM 277R. Writing and Reporting: Covering Silicon Valley—(Undergraduates register for 177R.) Focus is on techniques to write and report about Silicon Valley technologies. Visits from professional writers. Prerequisite: 104 or consent of instructor.

4-5 units, Spr (Markoff)

COMM 277T. Specialized Writing and Reporting: Journalism as Biography—(Undergraduates register for 177T.) How journalistic techniques, such as interviews and public record searches, can be used in writing biographies and profiles. The limits and challenges of such methods, and the opportunities and ethical dilemmas. Prerequisite: 104 or consent of instructor.

4-5 units, Spr (Weir)

COMM 280. Film Criticism—(Graduate section; see 180.)

4-5 units, Aut (Breitrose)

COMM 289. Journalism Master's Project

4 units, Spr (Staff)

COMM 291. Graduate Journalism Seminar—Required of students in the graduate program in Journalism. Meets throughout the year as a forum for discussion of current issues in the practice and performance of the press. Journalists in or visiting the Bay Area are often guest speakers.

1 unit, Aut (Glasser), Win (Woo), Spr (Garcia)

COMM 292. Producing the Nonfiction Film—Research and conceptualize documentary media projects, including development of nonfiction proposals. Prerequisite: documentary film and video master's student.

5 units, Aut (Samuelson)

COMM 293A. Documentary Film and Video M.A. Project Seminar I—Production of master's documentary film or video project. Focus is on storytelling structure and other practical, aesthetic, and ethical issues. Prerequisite: documentary film and video master's student.

6 units, Win (Friedman)

COMM 293B. Documentary Film And Video M.A. Project Seminar II—Editing and post-production of master's documentary film or video project. Focus is on aesthetic choices (structure, narration, music), distribution, contracts, and audience. Prerequisite: documentary film and video master's student.

6 units, Spr (Krawitz)

COMM 299. Individual Work

1-4 units, Aut, Win, Spr (Staff)

PRIMARYLY FOR DOCTORAL STUDENTS

COMM 301. Communication Curriculum Development and Pedagogy—Required of all second-year Ph.D. students.

1-5 units, Aut (Nass)

COMM 311. Theory of Communication—Required of all communication doctoral students. Approaches to communication theory, seminar and tutorial meetings, and extensive reading and papers. Prerequisite: Communication Ph.D. student, or consent of instructor.

1-5 units, Aut (Roberts)

COMM 314. Doctoral Research Methods II B—Part of the doctoral research methods sequence. The logic of qualitative research methods and modes of inquiry relevant to the study of communication and meaning. Prerequisite: Communication Ph.D. student, or consent of instructor.

1-5 units, Spr (Glasser)

COMM 317. Doctoral Research Methods I—Prerequisite: consent of instructor.

1-5 units, Win (Fishkin)

COMM 318. Doctoral Research Methods II—Prerequisite: consent of instructor.

1-5 units, Win (Krosnick)

COMM 319. Doctoral Research Methods III—Prerequisite: consent of instructor.

1-5 units, Spr (Bailenson)

COMM 320G. Advanced Topics in New Media and American Culture—Primarily for Ph.D. students. Prerequisite: 220 (formerly 219) or consent of instructor.

1-5 units, Spr (Turner)

COMM 326. Advanced Topics in Human Virtual Representation—Topics include the theoretical construct of person identity, the evolution of that construct given the advent of virtual environments, and methodological approaches to understanding virtual human representation. Prerequisite: consent of instructor.

1-5 units, Spr (Bailenson)

COMM 331G. Communication and Media Ethics—Limited to Ph.D. students. Advanced topics in press ethics and responsibility. Prerequisite: 231 or consent of instructor.

1-3 units, Win (Glasser)

COMM 336G. Democracy, Justice, and Deliberation—(Same as 236G; see 236G.)

1-5 units (Fishkin) not given 2004-05

COMM 344. Democracy, Press, and Public Opinion—Conflicting visions of what a democracy is or might be; different views of the role of the press and citizens in engaging public issues. Focus is on democratic theory with empirical work on public opinion and the role of the media. Topics include campaigns, the effects of new technology, competing strategies of public consultation, public journalism, and possibilities for citizen deliberation. Prerequisite: consent of instructor.

1-4 units, Spr (Fishkin)

COMM 345. Media Entertainment and Journalism: An International Perspective—(Master's students register for 245.) The role of the media in society; what influences the media; and how the media should be organized and regulated. Evidence and approaches from Europe, Asia, and the U.S.

1-4 units, Win (Curran)

COMM 347. Research in Political Psychology—Multi-methodological. Public preferences about government policies; the impact of the mass media on public opinion; party identification formation and change; voter decision making; determinants of voter turnout; issue public membership and its effects; measurement of public opinion; and the interface of democratic governments with their constituents.

2-4 units (Krosnick) not given 2004-05

COMM 361. Field Experimentation in Political Communication Research—The design of large-scale field experiments. Recent developments in analysis of experimental data including matching, propensity scores, and other techniques that address the problem of selection bias. Prerequisite: consent of instructor.

4 units, Spr (Iyengar)

COMM 368. Experimental Research in Advanced User Interfaces—(Same as 268; see 268.)

1-5 units, Spr (Nass)

COMM 372G. Seminar in Psychological Processing—Limited to Ph.D. students. Advanced topics. Prerequisite: 272 or consent of instructor.

1-5 units, Win (Reeves)

COMM 380A,B,C,D. Curriculum Practical Training—Practical experience in the communication industries. Prerequisites: graduate standing in Communication, consent of instructor. Meets requirements for Curricular Practical Training for students on F-1 visas. 380 A,B,C, and D may be taken only once.

1-5 units, Aut, Win, Spr, Sum (Staff)

COMM 397. Complementary Project—Individual research for Ph.D. candidates.

1-6 units, Aut, Win, Spr, Sum (Staff)

COMM 398. Major Research Project—Individual research for Ph.D. candidates.

1-6 units, Aut, Win, Spr, Sum (Staff)

COMM 399. Advanced Individual Work

1-9 units, Aut, Win, Spr, Sum (Staff)

COMPARATIVE LITERATURE

Emeriti: (Professors) Joseph Frank, John Freccero, René Girard, Herbert Lindenberger, Mary Pratt; *(Courtesy Professors)* W. B. Carnochan, Gerald Gillespie, Marjorie G. Perloff

Chair: Russell Berman

Director of Admissions: Margaret Cohen

Director of Graduate Studies: Russell Berman

Director of Undergraduate Studies: Monika Greenleaf

Professors: John Bender (English, Comparative Literature), Russell Berman (German Studies, Comparative Literature), Margaret Cohen (French and Italian, Comparative Literature), Roland Greene (English, Comparative Literature), Hans U. Gumbrecht (French and Italian, Spanish and Portuguese, Comparative Literature), Seth Lerer (English, Comparative Literature), Franco Moretti (English, Comparative Literature; on leave), David Palumbo-Liu (Comparative Literature), Patricia Parker (English, Comparative Literature; on leave), Richard Rorty (Comparative Literature), Ramón Saldivar (English, Comparative Literature), Jeffrey T. Schnapp (French and Italian, Comparative Literature; on leave Winter, Spring), Haun Saussy (Asian Languages, Comparative Literature; on leave)

Associate Professors: Amir Eshel (German Studies, Comparative Literature), Monika Greenleaf (Slavic Languages and Literatures, Comparative Literature), Elisabeth Mudimbe-Boyi (French and Italian, Comparative Literature), Andrea Nightingale (Classics, Comparative Literature)

Lecturer: Ann Gelder (Spring)

Courtesy Professors: David G. Halliburton, John Wang

Consulting Professor: Hayden White (Winter)

Visiting Professors: Sarah Kay (Autumn), Abbas M. Milani (Autumn)

Visiting Assistant Professor: Jessie Labov

Department Offices: Building 260, Room 127

Mail Code: 94305-2031

Phone: (650) 723-3566

Email: comparativelit@stanford.edu

Web Site: <http://www.stanford.edu/dept/complit>

Courses given in Comparative Literature have the subject code COMPLIT. For complete list of subject codes, see Appendix.

The Department of Comparative Literature offers courses in numerous literary traditions, often through crosslisting with other language and literature departments, and in the history and theory of literature. The department accepts candidates for the degrees of Bachelor of Arts, Master of Arts, and Doctor of Philosophy. Several distinct major tracks are available for each degree, some of them offered in cooperation with other departments.

UNDERGRADUATE PROGRAM BACHELOR OF ARTS

The undergraduate major in Comparative Literature is designed for students who combine the drive and ability to master foreign languages with a strong commitment to literary study. In all cases, students must do a substantial portion of their work in at least one foreign language. The major enables these students to pursue carefully constructed programs involving the in-depth study of literature in one or more languages not their own; and the study of their literature of specialization, its theory, and its practice in relation to other literatures, communications media, and disciplines.

The major is distinguished from those in the national literatures by its comparative scope, by the requirement of seminars that focus on fundamental theoretical questions regarding the nature of literature and literary inquiry, and by its requirement that the students' programs of study be structured around the exploration of a single literary genre, historical epoch, or theoretical problem. It differs from the "interdisciplinary" majors in English and Modern Thought and Literature (MTL) by its requirement that every student's program be anchored in the study of a lit-

erature *other* than that of his or her native language and, with specific regard to MTL, by its chronological scope.

The "comparative" aspect of each student's program of specialization is fulfilled according to which of the three available tracks he or she elects to follow:

Track A: The *Literary Studies* track integrates in-depth work in a primary literature with extensive work in a second literature (in the original language) and complementary course work in an outside field.

Track B: The *Interdisciplinary* track integrates in-depth work in a primary literature with the focused study of literature in relation to other arts (film, music, painting, etc.), intellectual disciplines (anthropology, history, linguistics, philosophy, etc.), or comparative work in area studies.

Track C: Interdisciplinary track with special concentration in the study of *Philosophical and Literary Thought*. This track integrates in-depth work in a primary literature with a systematic and articulated study of philosophy and its relations to literature.

An honors program is available in Comparative Literature for all three of these tracks (see below) that integrates substantial in-depth work in a primary literature with extensive work in a second literature (in the original language) or discipline, but also requires the writing of a senior honors paper.

In all three tracks, students work closely with the department's Director of Undergraduate Studies in designing an individually tailored program of specialization involving two related areas of study. Individual study plans require considerable advance planning and must meet the approval of the Director of Undergraduate Studies.

Declaring the Major—As soon as a student knows that he or she would like to declare the Comparative Literature major (and no later than Autumn Quarter of the junior year), he or she should obtain a worksheet for the appropriate track (see below) from the Comparative Literature office. The completed worksheet (with prospective courses for future years) should be handed to the Director of Undergraduate Studies with an updated official transcript and the student's advising file. The director should sign the worksheet, indicating his or her approval of the feasibility of the proposed program. This worksheet needs to be updated at least once during each academic year.

Advising—When a student declares Comparative Literature, he or she may choose to declare the Director of Undergraduate Studies as his or her adviser since the director approves credit for all course work (including course work abroad). The adviser may also be a member of the core Comparative Literature faculty. If this occurs, the student must meet periodically with the Director of Undergraduate Studies to monitor his/her progress in the major and for all questions regarding the major's requirements.

Overseas Campuses and Abroad Programs—The Department of Comparative Literature encourages time abroad, both for increased proficiency in language and the opportunity for advanced course work. Course work done at campuses other than Stanford's is counted toward the major at the discretion of the Director of Undergraduate Studies and is contingent upon the University's acceptance of classes for units. To that end, students abroad must make an effort to save all notes, papers, correspondence, etc., to increase the chance of acceptance.

Honors College—The Department of Comparative Literature encourages all honors students to enroll in the honors college scheduled during the weeks preceding the beginning of every academic year. Applications to the college are available from the department administrator. The department has traditionally run its honors college in collaboration with Interdisciplinary Studies in Humanities.

REQUIREMENTS

CORE FOR TRACKS A, B, AND C

All majors in Comparative Literature (including honors) are required to complete the following courses, the first as near as possible to the date of declaration and the second during the senior year. Together, these core seminars ensure that majors have been introduced to the framing propositions and principal methods of the discipline. More specifically these

courses are designed to lead students to inquire about the historical standing of such concepts as the literary, the aesthetic, criticism, genre, text, and theory.

1. COMPLIT 101, Seminar on Literature and the Institution of Literary Study (5 units), provides students with an introduction to the comparative study of literature, to the history of poetic theory, and to the historical development of literary fields. It is concerned with addressing foundational questions such as: what kind of knowledge is literary knowledge and how has this knowledge been codified and categorized with respect to other forms of knowledge? Fulfills the Writing in the Major requirement for Comparative Literature majors.
2. COMPLIT 199, Senior Seminar on Literary Theory (5 units), offers advanced students of comparative literature the opportunity for in-depth study of the evolution of modern literary theory and, particularly, of contemporary theoretical perspectives regarding the study of literary artifacts.

TRACK A—LITERARY STUDIES

Literary works are shaped by a complex interplay of historical forces and constraints, including contacts between differing cultures and traditions; the evolution of literary genres, practices, and conventions; shifts in media and technologies of reproduction and diffusion; and the imitation of model authors. By combining in-depth work in a primary literature with work in a second literature, this track emphasizes the study of such phenomena. It requires:

1. Courses using materials in the original language:
 - a) five courses which make up an intellectually coherent program, in the literature of the first language A.
 - b) three are in the literature of language B. These course selections must be coordinated with the courses selected in the literature of language A in order that, taken together, they form a cohesive program of study focused on one of:
 - 1) a specific literary genre
 - 2) a historical epoch
 - 3) a theoretical question

Note: if either A or B is the student's native language, further work must be done in a third language to the extent of at least one course in its literature. Literature courses usually begin after two years of college-level study. Bilingual students may count either tongue as native and the other as acquired. If language A, B, or C is Chinese, Japanese, Russian, or another language in which two years of language study does not constitute sufficient basis for literary study, some of the advanced work required for the major may be completed in translation or fulfilled through work in an advanced language course. An appropriate program should be approved following consultation with the department's Director of Undergraduate Studies.
2. Three cognate courses supplementing a student's work in the two chosen literatures and lending it further intellectual shape according to the criteria noted above. One course from the COMPLIT 100 series (but neither 101 or 199), or another course offered by the Department of Comparative Literature may be counted under this rubric.
3. One course, usually in translation, in a literature distant from the literatures of the student's concentration that can provide an outside perspective on the student's area of specialization.
4. Students in this track must also write at least one seminar paper that is comparative in nature. This paper should bring together material from courses taken in their primary and secondary literatures and may be an honors paper (see below), an individual research paper (developed through independent work with a faculty member, COMPLIT 198), or a paper integrating materials developed for two separate courses (by arrangement with the two instructors). It may be based on, though not identical to, a paper submitted for a requirement for a class. General guidelines for length require approximately 18-20 pages. The paper must be submitted to the Director of Undergraduate Studies and receive his or her approval no later than the end of Winter Quarter in the senior year of study.

TRACK B—INTERDISCIPLINARY

Literary creation is a complex human enterprise that intersects with a wide array of other fields of human endeavor and creation. Track B is designed to promote the focused study of intersections between literature and the arts (including film, music, and painting), and other disciplines (including anthropology, feminist studies, history, history of science, linguistics, and philosophy). It requires:

1. Five courses using materials in the original language, and making up an intellectually coherent program in the literature of a language other than the student's native tongue. Bilingual students may satisfy this requirement in either of their original languages or in a third language.
2. Six courses (chosen as a function of the courses noted above) in:
 - a) a single discipline or closely related cluster of disciplines
 - b) the cultural history of a single historical epoch
 - c) one or more of the fine arts; media or film studies
 - d) area studies

This course work must be shaped around the literature courses selected in item 1. It must either treat cogent analytical or thematic issues in the chosen discipline, or be directly relevant to the chosen historical specialization. Students who chose option '2d' must select courses that include work outside a single area studies focus or that have a genuinely comparative aspect. Each of these six courses must be approved in advance by the Director of Undergraduate Studies.
3. At least two of the eleven courses in items 1 and 2 shall be taught by Comparative Literature faculty.
4. One course, usually in translation, on a literature distant from the the student's two concentration. The intention here is, as above, to offer an outside perspective on the student's field of specialization.
5. Students in this track must also write at least one seminar paper that is interdisciplinary in nature. This paper should bring together material from courses taken in their primary literature and in another discipline and may be an honors paper (see below), an individual research paper (developed through independent work with a faculty member in COMPLIT 198), or a paper integrating materials developed for two separate courses (by arrangement with the two instructors). Though it may draw on previous course work, the paper must be an original composition; general guidelines for length require 18-20 pages. It must be submitted to the Director of Undergraduate Studies and receive his or her approval no later than the end of Winter Quarter in the fourth year of study.

Students who choose the interdisciplinary option should be aware that it requires careful advance planning given that many course offerings are offered in alternate years.

TRACK C—PHILOSOPHICAL AND LITERARY THOUGHT

Undergraduates may major in Comparative Literature with a special degree field in interdisciplinary studies at the intersection of literature and philosophy. Students in this track take courses alongside students from other departments which also have specialized tracks associated with the program for the study of Philosophical and Literary Thought, with administrative staff in the DLCL. Each student in this track is assigned an adviser in Comparative Literature, and student schedules and course of study must be approved in writing by the adviser, the Director of Undergraduate Studies of Comparative Literature, and the Director of Undergraduate Studies of the program.

A total of 65 units must be completed for this track, including the following requirements:

1. Five courses using materials in the original language and making up an intellectually coherent program in the literature of a language other than the student's native tongue. Bilingual students may satisfy this requirement in either of their original languages or in a third language. The coherence of this program must be approved in writing by the Director of Undergraduate Studies of Comparative Literature.
2. *Philosophy and Literature Gateway Course* (4 units): COMPLIT 181 (same as PHIL 81). This course should be taken as early as possible in the student's career, normally in the sophomore year.
3. *Philosophy Writing in the Major* (5 units): PHIL 80. Prerequisite: introductory philosophy class.

4. *Aesthetics, Ethics, Political Philosophy* (ca. 4 units): one course from the PHIL 170 series.
5. *Language, Mind, Metaphysics, and Epistemology* (ca. 4 units): one course from the PHIL 180 series.
6. *History of Philosophy* (ca. 8 units): two courses in the history of philosophy, numbered above PHIL 100.
7. *Related Courses* (ca. 8 units): two upper division courses relevant to the study of philosophy and literature as identified by the committee in charge of the program. A list of approved courses is available from the undergraduate adviser of the program in philosophical and literary thought.
8. One course, typically in translation, in a literature distant from that of the student's concentration and offering an outside perspective on that literary tradition.
9. Capstone Seminar (ca. 4 units): in addition to COMPLIT 199, students take a capstone seminar of relevance to philosophy and literature approved by the undergraduate adviser of the program in philosophical and literary thought. The student's choice of a capstone seminar must be approved in writing by the Director of Undergraduate Studies of Comparative Literature and by the Director of Undergraduate Studies of the program.
10. *Seminar Paper Requirement*: students must write at least one seminar paper that is interdisciplinary in nature. This paper brings together material from courses taken in philosophy and literature, and may be an honors paper (see below), an individual research paper (developed through independent work with a faculty member), or a paper integrating materials developed for two separate courses (by arrangement with the two instructors). Though it may draw on previous course work, the paper must be an original composition, 18-20 pages in length. It must be submitted to the Director of Undergraduate Studies and receive approval no later than the end of Winter Quarter in the fourth year of study.

At least two of the courses counted toward requirements 1, 2, 7, 8, and 9 must be taught by Comparative Literature faculty. Transfer units may not normally be used to satisfy requirements 2, 3, 4, 5, 6 and 9. Units devoted to acquiring language proficiency are not be counted toward the 65-unit requirement.

MINORS

The undergraduate minor in Comparative Literature (CL) represents an abbreviated version of the major. In all cases, students must do a substantial portion of their work in at least one foreign language.

All minors in Comparative Literature are required to complete COMPLIT 101, Seminar on Literature and the Institution of Literary Study (5 units). This provides an essential introduction to the framing propositions and principal methods of the discipline.

In addition, all minors must complete two courses in the literature of a language other than their native tongue. All materials in each course must be in the original language.

1. *Literary Studies Track*: integrates in-depth work in a primary literature with work in a second literature. Requirements are:
 - a) two courses in a second literature (this may include courses in translation, as well as courses in English and/or American literature).
 - b) one additional course in Comparative Literature.
2. *Interdisciplinary Track*: integrates in-depth work in the primary literature with the focused study of literature in relation to another art or intellectual discipline. Requirements are:
 - a) two courses in a single discipline, or the cultural history of a single historical epoch.
 - b) one additional course in Comparative Literature.

The minor is modeled primarily on the structure and progression of the major (with the appropriate reduction in course and unit requirements, as stipulated by the Committee on Undergraduate Studies). It retains the distinction between the two CL tracks and enables students to design a course of study built around the core CL seminar.

The Director of Undergraduate Studies is responsible for evaluating all requests and individual study plans for the minor.

HONORS PROGRAM

The honors option is reserved for exceptionally motivated students who wish to undertake an even more intensive and extensive program of study leading to the writing of a senior honors paper. The program allows for either a "Literary Studies" or an "Interdisciplinary" emphasis and it requires:

1. Six courses, using materials in the original language and making up an intellectually coherent program, in the literature of language A. For the interdisciplinary emphasis, these courses must be in the literature of a language other than the student's native tongue.
2. Emphasis:
 - a) *For a Literary Studies Emphasis*: three courses using materials in the original language, in the literature of language B.

Note: Track A's rules regarding students' native languages, bilingualism, and special exemptions for students studying Chinese, Japanese, Russian, etc., also govern students in the honors program who opt for a literary studies emphasis. These course selections must be coordinated with the courses selected in the literature of language A in order that, taken together, they form a cohesive program of study focused on one of the following:

 - 1) a specific literary genre
 - 2) an historical epoch
 - 3) a theoretical question and three cognate courses that supplement a student's work in the two chosen literatures and lend it further intellectual shape. One course from the COMPLIT 100 series (but not 101 or 199) may be counted under this rubric.
 - b) *For an Interdisciplinary Emphasis*: six courses as outlined in the general requirements for the Interdisciplinary Track (Track B), above. This course work must be shaped around the literature courses selected in item 1. It must either treat cogent analytic or thematic issues in the chosen discipline, or be directly relevant to the chosen historical specialization. Each of these six courses must be approved in advance by the Director of Undergraduate Studies.
3. One further course is required, usually in translation, on a literature distant from the two of the student's concentrations, so as to provide an "outside" perspective on the student's area of specialization.
4. During Spring Quarter of the junior year, a letter requesting admission to the honors program must be submitted to the department's Director of Undergraduate Studies. This letter must be accompanied by:
 - a) the completed, signed worksheet
 - b) an updated transcript
 - c) a sample seminar paper
 - d) an intended plan of study for the senior year (drawn up according to the emphasis selected)
 - e) a preliminary statement (two to five pages) regarding the proposed topic of the honors paper (elaborated in consultation with the Director of Undergraduate Studies)

In Spring Quarter of the junior year, the student may enroll for 2 units of credit for independent research in COMPLIT 194.

This application is voted on by the Comparative Literature honors committee, made up of the Director of Undergraduate Studies and the Chair of the Department of Comparative Literature. Should it be approved, a faculty tutor is appointed by the director according to the topic. At the appropriate time, a second reader is designated by the honors committee.
5. Once the request for admission to the honors track has been approved, the student may choose to enroll in a 5-unit tutorial (COMPLIT 195, graded credit/no credit) with a faculty member during Autumn Quarter of the senior year in order to refine the project description, begin all necessary research, and initiate the composition of the honors paper.
6. During Winter Quarter of the senior year, the student must enroll in a 5-unit independent study (COMPLIT 195) with his or her faculty tutor for purposes of drafting the honors paper. At the end of the quarter, a completed draft must be submitted to the tutor. If it meets his or her approval as is, two copies must then be forwarded to the honors committee which decides on the basis of the paper's quality whether

or not the student is awarded honors. If the faculty tutor feels that the paper still requires rewriting at the end of Winter Quarter, the student may enroll for 2 units of independent study during Spring Quarter for purposes of final submission. In order to be considered for honors in Comparative Literature, two copies of the final paper must be submitted to the honors committee no later than the fifth week of Spring Quarter.

Honors papers vary considerably in length as a function of their topic, historical scope, and methodology. They may make use of previous work developed in seminars and courses, but must be of appropriate comparative or theoretical scope and should reflect the student's chosen emphasis. Quality (not quantity) is the key criterion. As a rule of thumb, however, they run in the range of 40-70 pages.

Honors Awards—The two readers of any honors thesis in Comparative Literature may elect to nominate the thesis in question for University-wide awards if they feel that it is deserving. In addition, the department honors committee evaluates on a competitive basis the honors theses completed in a given year and nominates one for University-wide awards competitions.

GRADUATE PROGRAM DOCTOR OF PHILOSOPHY

University requirements for the Ph.D. are described in the "Graduate Degrees" section of this bulletin.

The Ph.D. program is designed for a small group of students whose linguistic background, breadth of interest in literature, and curiosity about the problems of literary scholarship and theory (including the relation of literature to other disciplines) make this program more appropriate to their needs than the Ph.D. in one of the individual literatures. Students take courses in at least three literatures (one may be that of the native language), to be studied in the original. The program is designed to encourage familiarity with the major approaches to literary study prevailing today.

Before starting graduate work at Stanford, students should have completed an undergraduate program with a strong background in one literature and some work in a second literature studied in the original language. Since the program demands an advanced knowledge of two non-native languages and a reading knowledge of a third non-native language, students should at the time of application have an advanced enough knowledge of one of the three to take graduate-level courses in that language when they enter the program. They should be making enough progress in the study of a second language to enable them take graduate courses in that language not later than the beginning of the second year, and earlier if possible. Applicants are expected to take an intensive course in the third language before entrance.

A considerable part of a student's work consists of individual study toward the oral examinations, for which each student devises reading lists in consultation with the graduate adviser. These examinations are centered on the study of particular periods, genres, and problems of literary study.

Students are admitted under a fellowship plan which attempts to integrate financial support and completion of residence requirements with their training as prospective university teachers. Tenure as a fellow, assuming satisfactory academic progress, is for a maximum of four or five years, graduate-level work in literature completed elsewhere being counted as part of this four- or five-year period. The minimum teaching requirement is the same regardless of financial support. (For specific teaching requirements, see below.) Five years of support are normally available, from a combination of fellowships and teaching assistantships, to Ph.D. candidates admitted to the Comparative Literature Department who are making satisfactory progress toward the degree.

APPLICATION PROCEDURES

Competition for entrance into the program is keen. The program is kept small so that students have as much opportunity as possible to work in individual projects under faculty supervision throughout the period of study. No more than 16 students are in residence at any one time. The department does not plan to admit more than three or four new students for the class entering in September. Completed applications are due Jan-

uary 4. Because of the special nature of comparative literature studies, the statement of purpose included in the application for admission should contain the following information besides the general plan for graduate work called for on the application:

1. A detailed description of the applicant's present degree of proficiency in each of the languages studied, indicating the languages in which the applicant is prepared to do graduate work at present and outlining plans to meet additional language requirements of the program.
2. A description of the applicant's area of interest (for instance, theoretical problems, genres, periods) within literary study and the reasons for finding comparative literature more suitable to his or her needs than the study of a single literature. Applicants should also indicate what they think will be their primary field.

All applicants should arrange to have the results of the general section of the Graduate Record Examination sent to the Department of Comparative Literature.

Recommendations should, if possible, come from faculty in at least two of the literatures in which the student proposes to work.

Applicants must submit a copy of an undergraduate term paper which they consider representative of their best work.

DEGREE REQUIREMENTS

Residence—A candidate for the Ph.D. degree must complete three years (nine quarters) of full-time work, or the equivalent, in graduate study beyond the B.A. degree. The student is expected to take at least 72 units of graduate work in addition to the doctoral dissertation. At least three consecutive quarters of course work must be taken at Stanford.

Languages—Students must know three non-native languages, two of them sufficiently to qualify for graduate courses in these languages and the third sufficiently to demonstrate the ability to read a major author in this language. Only the third language may be certified by examination. The other two are certified by graduate-level course work specified below. Language preparation must be sufficient to support graduate-level course work in at least one language during the first year and in the second language during the second year. Students must demonstrate a reading knowledge of the third non-native language no later than the beginning of the third year.

Literatures made up of works written in the same language (such as Spanish and Latin American) are counted as one. One of the student's three literatures usually is designated as the primary field, the other two as secondary fields, although some students may offer two literatures at the primary level (six or more graduate courses).

Teaching—Fellows, whatever their sources of financial support, are ordinarily required to undertake a total of five quarters of supervised apprenticeships and teaching at half time. Fellows must complete whatever pedagogy courses are required by the departments in which they teach. The department's minimum teaching requirement is a total of three quarters.

Minimum Course Requirements—Students are advised that the range and depth of preparation necessary to support quality work on the dissertation, as well as demands in the present professional marketplace for coverage of both traditional and interdisciplinary areas of knowledge, render these requirements as bare minimums.

1. COMPLIT 369
2. A sufficient number of courses (six or more) in the student's primary field to assure knowledge of the basic works in one national literature from its beginnings until the present.
3. At least two additional complementary courses, with most of the reading in the original, in each of two different national literatures. Students whose primary field is a non-native language are required to take two courses in *one* additional literature not their own.

Minimum course requirements must be completed before the student is scheduled to take the University oral examination. These requirements are kept to a minimum so that students have sufficient opportunity to seek out new areas of interest. A course is an offering of 3-5 units. Independent study may take the place of up to two of the required courses, but no more; classroom work with faculty and other students is central to the program.

Examinations—Three examinations are required. The third and last is the University oral examination. Students' reading lists for each examination must be approved by an examination committee and by the graduate adviser. The examinations consist of the following, each of which takes the form of an oral colloquy between the student and a committee of faculty members with interests in the subject areas:

1. *First One-Hour Examination*: on a literary genre to consist of (a) a knowledge of a substantial number of literary works in a single genre, the list to include works from a number of centuries and from at least three national literatures, and (b) a grasp of the theoretical problems involved in dealing with this genre and with the question of genre in general. The examination must be taken no later than the beginning of the student's second year of graduate work (or the third quarter of the first year for students who enter with a year of previous graduate work).
2. *Second One-Hour Examination*: on literary criticism and theory, to consist of the exploration of a specific problem proposed and defined by the student. The problem must be sufficiently wide-ranging to demand the reading of critical texts from a variety of periods. The examination must be taken no later than the first quarter of the student's third year of graduate work (or the third quarter of the second year for students who enter with a year of graduate work). Students may elect to take this section of the examination before the genre section, in which case it must be taken at the earlier time.
3. *University Oral Examination*: on a literary period, to consist of in-depth knowledge of a period of approximately a century, in three or more literatures with primary emphasis on a single national literature or, in occasional cases, two national literatures. The reading list covers chiefly the major literary texts of this period but may also include some studies of intellectual backgrounds and modern critical discussions of the period. Students must demonstrate a grasp of how to discuss and define this period as well as the concept of periods in general. This examination is *not* to be on the dissertation topic, on a single genre, or on current criticism, but rather on a multiplicity of texts from the period. Students whose course work combines an ancient with a modern literature have the option of dividing the period sections into two wholly separate periods.

Qualifying Procedures—The qualification procedures for students in Comparative Literature take place during the quarter in which the student takes the first Ph.D. examination. Ordinarily, this is the beginning of the second year, but students who enter with a year of graduate work elsewhere must take the examination no later than the third quarter of the first year. Any student may elect to take the examination during the third quarter of the first year.

Students are judged qualified to proceed to the Ph.D. on the basis of the first part of the Ph.D. examination as well as other aspects of their work (for example, performance in courses, ability to do original research) that predict strong promise for their dissertations and future careers as scholars and critics. As soon as the student has completed the qualifying procedures, the chair recommends him or her for admission to candidacy for the Ph.D. At this time the student is also recommended for the Master of Arts degree in Comparative Literature if he or she has completed 45 units of work at Stanford and has not already completed an M.A. before entering the program.

Colloquium—The colloquium normally takes place in the quarter following the University oral examination. The colloquium lasts one hour, begins with a brief introduction to the dissertation prospectus by the student lasting no more than five minutes, and consists of a discussion of the prospectus by the student and the three readers of the dissertation. At the end of the hour, the faculty readers vote on the outcome of the colloquium. If the outcome is favorable (by majority vote), the student is free to proceed with work on the dissertation. If the proposal is found to be unsatisfactory (by majority vote), the dissertation readers may ask the student to revise and resubmit the dissertation prospectus and to schedule a second colloquium.

The prospectus must be prepared in close consultation with the dissertation adviser during the months preceding the colloquium. It must be

submitted in its final form to the readers no later than one week before the colloquium. A prospectus should not exceed ten double spaced pages, in addition to which it should include a working bibliography of primary and secondary sources. It should offer a synthetic overview of the dissertation, describe its methodology and the project's relation to prior scholarship on the topic, and lay out a complete chapter by chapter plan.

It is the student's responsibility to schedule the colloquium no later than the first half of the quarter after that quarter in which the student passed the University Oral Examination. The student should arrange the date and time in consultation with the department administrator and with the three examiners. The department administrator schedules an appropriate room for the colloquium.

Members of the dissertation reading committee ordinarily are drawn from the University oral examination committee, but need not be the same.

PH.D. MINOR

This minor is designed for students working toward the Ph.D. in the various foreign language departments. Students working toward the Ph.D. in English are directed to the program in English and Comparative Literature described among the Department of English offerings. Students must have:

1. A knowledge of at least two foreign languages, one of them sufficient to qualify for graduate-level courses in that language, the second sufficient to read a major author in the original language.
2. A minimum of six graduate courses, of which three must be in the department of the second literature and three in the Department of Comparative Literature, the latter to include a seminar in literary theory or criticism. At least two of the three courses in comparative literature should originate in a department other than the one in which the student is completing the degree. Except for students in the Asian languages, students must choose a second literature outside the department of their major literature.



COURSES

WIM indicates that the course satisfies the Writing in the Major requirement.

Students interested in literature and literary studies should also consult course listings in the departments of Asian Languages, Classics, English, French and Italian, German Studies, Slavic Languages and Literatures, and Spanish and Portuguese, in the Program in Modern Thought and Literature, and in the Division of Literatures, Cultures, and Languages.

INTRODUCTION TO THE HUMANITIES (IHUM)

The following Introduction to the Humanities courses are taught by Comparative Literature department faculty members. IHUM courses are typically available only to freshmen seeking to fulfill GER:1 requirements; see the "Introduction to the Humanities" section of this bulletin for further information. Prospective majors in Comparative Literature are advised to consider satisfying their GER:1b,c requirements by registering for the following IHUM courses.

IHUM 8A,9A. Myth and Modernity: Culture in Germany—The tension between tradition and progress through an examination of German cultural history. The experience of modernity typically involves overcoming or denying the past, but that same past can return to haunt the present in the form of myths. The interplay of myth and modernity, the irrationality of narrative, and the reason of progress, through the example of German culture, especially in literature, from the heroic epics of the medieval era through the catastrophes of the last century. GER:1b,1c (two quarter sequence)

IHUM 8A. 5 units, Win (*Berman*)

IHUM 9A. 5 units, Spr (*Eshel*)

GENERAL

These courses are aimed at freshmen and sophomores who are non-majors (and/or potential majors) and provide an entry point to the discipline of Comparative Literature.

All majors are required, as soon as possible after declaration, to complete COMPLIT 101. During the senior year, majors enroll in 199.

COMPLIT 24Q. Ethnicity and Literature—Stanford Introductory Seminar. Preference to sophomores. What is meant by ethnic literature? How is ethnic writing different from non-ethnic writing, or is there such a thing as either? If ethnicity is accepted as an analytic perspective, how does it affect the way literature is read by ethnic peoples? Articles and works of fiction; films on ethnic literature and cultural politics. How ethnic literature represents the nexus of social, historical, political, and personal issues. GER:3a,4b

5 units, Aut (*Palumbo-Liu*)

COMPLIT 28N. Philosophy and Literature—Stanford Introductory Seminar. (Same as CLASSGEN 28N.) Preference to freshmen. Literary and philosophic wisdom examined using authors including classical Greek tragedians, Plato, Nietzsche, Dostoevsky, Heidegger, and Beckett. Different conceptions of human nature and ethical life offered by literature and philosophy: how do these understandings characterize the meaning of life; and what is at a stake in the ancient quarrel between philosophy and literature? What power does reason have over the irrational? How do emotions and passions contribute to ethical wisdom? GER:3a

3-5 units, Spr (*Nightingale*)

COMPLIT 101. Seminar on Literature and the Institution of Literary Study—Introduction to the comparative study of literature; to major standpoints in recent criticism, theory, and scholarship; and to the professional outlook on literary study. GER:3a,WIM

5 units, Win (*White*)

COMPLIT 116Q. History of Western Philosophy and its Blind Spot: The History of Sports—Stanford introductory Seminar. Preference to sophomores. Introduction to the history of Western philosophy based on texts by Plato, Aquinas, Descartes, Kant, Hegel, Bergson, Dewey, and Wittgenstein. Emphasis is on the hidden blind spot of Western philosophy for more than two millennia: the relationship between philosophy and sports and the history of two different cultural practices.

3-5 units, Win (*Gumbrecht*)

COMPLIT 194. Independent Research

1-5 units, Aut, Win, Spr (*Staff*)

COMPLIT 195. Honors Research—195A and B should total 10 units between the two quarters. 195B and C must be the same grade.

195A. Honors Research

1-10 units, Aut (*Staff*)

195B. Honors Thesis

1-10 units, Win (*Staff*)

195C. Honors Thesis

2 units, Spr (*Staff*)

COMPLIT 199. Senior Seminar on Literary Theory—Advanced literary theory and critical practice by engaging issues in detail including antecedents in canonical theory and iterations today. Topics for this year: world literature as a problem for comparative literature; recent versions of textual theory and scholarship; and the debate about the nature of comparative literature as a discipline. Prerequisite: senior Comparative Literature major or consent of instructor.

5 units, Aut (*Greene*)

UNDERGRADUATE/GRADUATE

COMPLIT 52/152. Worlds (No Longer) Apart—What do rappers in India, a Filipino taxi driver in Paris, and television viewers in Nepal have to do with ghosts of a Chinese American girl in Stockton, young Japanese on a pilgrimage to Graceland, and a Haitian girl in New York? Is the world now one big McDonalds? Does the world dream as one, in the imagery of Disney? Literary narratives, films, documentaries, and videos are used to examine the new mixtures and textures of modern life, beneath the glossy surfaces of global culture. How authors such as Chinua Achebe, Maxine Hong Kingston, and Edwidge Danticat have imagined their new worlds, and how people's lives are shaped by new global histories. GER:3a,4a

3-4 units (*Palumbo-Liu*) not given 2004-05

COMPLIT 105. The Literature of the Americas—(Same as ENGLISH 172E.) Introduction to the literature of the Americas. Representations of the creation of an American new world experience, myths of America as utopia, and critiques of notions of the self and the nation to which such myths give rise in political, historical, literary, and mass media forms. Readings include Columbus, Bernal Díaz del Castillo, Aztec codices, Sor Juana, Tocqueville, Fenimore Cooper, Whitman, Machado de Assis, Mario de Andrade, Martí, Neruda, Williams, Rulfo, Faulkner, Morrison, and Sandra Cisneros. GER:3a,4b

5 units (*Greene, Saldívar*) not given 2004-05

COMPLIT 115C. History of Japanese Popular Culture—(Enroll in JAPANGEN 115.)

4 units, Spr (*Reichert*)

COMPLIT 122. Yiddish Literature—(Enroll in SLAVGEN 122/222.)

5 units, Spr (*Safran*)

COMPLIT 131. Chinese Poetry in Translation—(Enroll in CHINGEN 131/231.)

4 units, Aut (*Jahshan*)

COMPLIT 133. Literature and Society: Introduction to Francophone Literature from Africa and the Caribbean—(Same as FRENLIT 133.) Focus is on major African and Caribbean writers, and the issues raised in literary works which reflect changing aspects of the societies and cultures of Francophone Africa and the French Caribbean: meeting the challenge of acculturation and the search for identity; tradition

competing with modernity; the use of oral tradition and writing; women's role and status; writers' social responsibility. Visual material; readings from fiction, poetry, plays, and criticism. In French. GER:3a,4a
4 units, Win (*Boyi*)

COMPLIT 136. Does Literature Matter?—What literature means to people in their daily lives. Topics include current and historical considerations of literature as a tool of ethical education; the values of leisure and pleasure as they affect perceptions and definitions of literature; and literature as a method of community building. Students examine personal experiences with literature. Readings include Tolstoy, Wright, Woolf, Eggers, and literary and cultural theorists. GER:3a
3-5 units, Spr (*Gelder*)

COMPLIT 138. Survey of Modern Japanese Literature in Translation—(Enroll in JAPANGEN 138.)
5 units, Aut (*Reichert*)

COMPLIT 145S/245S. The Age of Experiment, 1820-50—(Same as SLAVGEN 145/245.) After the Napoleonic Wars, the Russian Empire made an accelerated leap into European culture. The Golden Age of Russian literature is a period of experiments. Pushkin's *Eugene Onegin*, *Belkin Tales*, and *Captain's Daughter*; Lermontov's *Hero of Our Time*; Gogol's *Petersburg Tales*, *Inspector-General*, and *Dead Souls*; Tolstoy's *Childhood*; Dostoevsky's *Double* and *Notes from the Dead House*, in the context of Russian culture and contemporary European trends. GER:3a,4a

3-4 units, Aut (*Greenleaf*)

COMPLIT 146. The Age of Transgression: The Great Russian Novel—(Enroll in SLAVGEN 146/246.)
4 units, Win (*Safran*)

COMPLIT 149. What is Nobel Literature? Reading, Assessing, and Interpreting the Nobel Novels on the World Stage—Recent Nobel laureates in literature: Gabriel García Márquez, Nadine Gordimer, Toni Morrison, Kenzaburo Oe, and V.S. Naipaul. These writers come from different locations, yet each participates in a global conversation about the human condition. The impact of their identities upon their thought and writing. How the Nobel prize is awarded. The role of literature in the world, and analytical skills for reading literary texts. GER:3a,4a

5 units, Sum (*Palumbo-Liu*)

COMPLIT 150. Poetry and Poetics—(Enroll in ENGLISH 60/160.)
3-5 units, Aut (*Fields*), Win (*Jenkins*), Spr (*Boland*)

COMPLIT 151S. Dostoevsky and His Times—(Same as SLAVGEN 151/251.) Open to juniors, seniors, and graduate students. Major works in English translation with reference to related developments in Russian and European culture and intellectual history. GER:3a

4 units, Win (*Frank*)

COMPLIT 156D/256D. Nabokov and Modernism—(Same as SLAVGEN 156/256.) Nabokov's stories, novels, and a film script in the context of: modernist writers such as Bergson, Proust, and Joyce; media including painting, film, and photography; and philosophical thought. Critical approaches that elude the author's control. Readings include *Bend Sinister*, *Lolita*, *Pale Fire*, *Speak Memory*, and *Ada*. GER:3a

3-5 units, Spr (*Greenleaf*)

COMPLIT 161/261. Poetess: The Grammar of the Self when the Poet is a Woman—(Same as SLAVGEN 161/261.) Seminar. Lyrical works by women poets from the U.S., Russia, E. Europe, and Germany (Dickinson, Moore, Brooks and the Harlem Renaissance, Bishop, Akhmatova, Tsvetaeva, Sachs, Plath, Cisneros, Angelou, Graham, Howe, and Szymborska.) Theoretical and practical issues: breaking and entering the male preserve of high poetry in different eras; the interaction of written and oral, political, and performative modes of expression; new representations of the feminine body and experience in the visual arts; and the development of a female lineage and modes of poetic legitimation, association, and inspiration. GER:3a,4c

4 units (*Greenleaf*) not given 2004-05

COMPLIT 165. Poetry, Painting, and Music of the Russian Avant Garde—(Enroll in SLAVGEN 165/265.)

4 units, Win (*Fleishman*)

COMPLIT 168. Introduction to Asian American Culture—Asian American cultural production (film, drama, poetry, fiction, music) in sociohistorical context, with attention to topics of ethnicity, race, class, and gender, and the political economy of ethnic culture in the U.S. GER:3a,4b

3-5 units, Win (*Palumbo-Liu*)

COMPLIT 168B. Culture of Terror: Nazi Germany—(Same as GERGEN 168B.) Cultural and intellectual sources of totalitarianism in Nazi Germany; spectacles of power and violence; complicity of intellectuals and artists; culture in a regime of fear; mass culture and dictatorship; anti-Nazi literature; memoirs of the Holocaust, and the problem of post-war representation. GER:3a

4 units, Spr (*Berman*)

COMPLIT 173. Poetics and Politics of Caribbean Women's Literature—(Enroll in CASA 145A/245A.)

5 units, Win (*Duffey*)

COMPLIT 175. Philosophy's Place in Culture—Historical survey of the cultural roles played by philosophy in Western history, and of relations among philosophy, religion, natural science, art, and politics. Readings from ancient, medieval, and modern philosophical writings emphasizing Plato, Nietzsche, Dewey, and Heidegger. Prerequisite: course in philosophy. GER:3a

3-5 units, Win (*Rorty*)

COMPLIT 181. Philosophy and Literature Gateway—(Enroll in FRENGEN 181, ITALGEN 181, PHIL 81.)

4 units, Win (*Landy, Anderson*)

COMPLIT 183. Border Crossings and American Identities—(Enroll in CASA 183D/283D.)

5 units, Aut (*Duffey*)

COMPLIT 202. Comparative Fictions of Ethnicity—How authors create fiction informed by the notions of ethnicity, difference, and social ideologies. Focus is on narratives written by racial and ethnic minorities whose representation reveals how they came to write and how they sense themselves to be written by historical, social, and cultural forces. How ideas such as identity, national character, ethnicity, and gender evolved. Novels from settings including the U.S., Middle East, and Asia. Authors include Sandra Cisneros, John Wideman, Zora Neale Hurston, Toshio Mori, Nieh Hualing, Anton Shammas, and N. Scott Momaday. GER:3a,4b

5 units, Win (*Palumbo-Liu*)

COMPLIT 213. The Literary Dialogue of Pushkin and Gogol in the Formative Context of the 1830s—(Same as SLAVLIT 213.) Pushkin and Gogol's poetic, fictional, and journalistic works of the 1830s as an implicit dialogue about the emerging artistic and national directions of Russian literature, the Petersburg text, journalism, and theater. Paired Pushkin and Gogol texts read against the background of Belinsky, Pogodin, Senkovsky, Shakhovskoi, St. Beuve, Jules Janin, Balzac, and L. Ginzburg. Prerequisite: Russian. GER:3a

2-4 units, Aut (*Greenleaf*)

COMPLIT 229A. Poetry, Poetology, Poetics—(Enroll in SLAVGEN 229A.)

1-2 units, Aut, Win, Spr (*Fleishman*)

COMPLIT 231. Denis Diderot—(Same as FRENLIT 231.) Seminar. The author and *philosophe* who embodied the desires, limits, forms, fascinations, genres, and discourses of the Enlightenment. All major texts by Diderot in their historical contexts. What value and position might the Enlightenment occupy in the 21st century? GER:3a

3-5 units, Aut (*Gumbrecht*)

COMPLIT 234. Ethics in a Time of Uncertainty—Focus is on regions where issues of ethnicity, race, and national and regional identities are foregrounded. How literature can be used to convey complex, ambiguous, multi-perspective ethical issues in humanistic terms. Novels include: Andric, *The Bridge on the Drina*; Habiby, *Saeed the Pessoptimist*; Roy, *The God of Small Things*; Khalifeh, *Wild Thorns*; Achebe, *No Longer at Ease*; Greene, *The Quiet American*. Historical and political materials. GER:3a

5 units (Palumbo-Liu) not given 2004-05

COMPLIT 248. Theological Poets: Gods, Laws, and Rhythms in European Romanticism—(Same as FRENGEN 248.)

3-5 units, Win (Edelstein)

COMPLIT 251. Tradition and Modernity in Contemporary Iranian Literature—Modern Iranian literary texts in light of narrative theory and cultural alterity. Formal aesthetic aspects and social historical contexts. The problem of censorship in Iranian literary history. The sources of Iranian and Muslim modernity as derived from the West or as an indigenous development. GER:3a

5 units, Aut (Milani)

COMPLIT 256E. Political Anthropology: From Rousseau to Freud—(Enroll in FRENGEN 256E.)

3-5 units, Spr (Dupuy)

COMPLIT 257. Philosophy and Fiction—(Enroll in FRENLIT 257.)

3-5 units, Spr (Dupuy)

COMPLIT 279. Original Skin: Flaying, Writing, and Thinking the Self in Medieval Culture—Books and the self in the Middle Ages as products of skin, given that parchment was the standard writing medium; the uncanny conjunction in which writers and illustrators depict flaying. Sources include French, English, and Latin texts, and thinkers including Augustine and Zizek. GER:3a

5 units, Aut (Kay)

COMPLIT 283/383. The Austro-Hungarian Grotesque—The grotesque as an idea that has survived centuries of change and dislocation while remaining familiar in contemporary culture. History and context for the literary and visual aesthetic of the Austro-Hungarian grotesque. Its early modern origins, turn-of-the-century Vienna, and the effects of psychoanalysis on later surrealist incarnations. GER:3a

5 units, Aut (Labov)

COMPLIT 284. Philosophy and Poetry in 20th-Century French and Italian Theory—(Enroll in FRENGEN 284, ITALGEN 284.)

3-5 units, Win (Wittman)

COMPLIT 288. Decadence and Modernism from Mallarmé to Marinetti—(Enroll in FRENGEN 288, ITALGEN 288.)

3-5 units, Aut (Wittman)

COMPLIT 294. Translation as Literary and Cultural History: Toward a Hermeneutics of Cultural Transfer—(Enroll in GERLIT 294.)

3-5 units, Aut (Müller-Vollmer)

COMPLIT 299. Present Pasts: History, Fiction, Temporality—(Same as GERLIT 299.) The crisis of temporality and aversion to traditional notions of history in late 20th-century Western culture. Sources include literary, philosophical, and historical works with focus on the cultural dislocations attending the rebellion against modernity and the difficulty of making sense of the relation between past and present as traditional values, ideologies, and utopias weaken. Readings may include Heidegger, Benjamin, Koselleck, Ricoeur, Sartre, Levi, Kafka, Agnon, Woolf, Celan, and Weiss. GER:3a

5 units, Win (Eshel, White)

COMPLIT 304H. Romanticism and its Modern Legacies: Cultural Materialism, Critical Aesthetics, Experimental Poetics—(Enroll in ENGLISH 304H.)

5 units, Aut (Kaufman)

COMPLIT 310. The Transatlantic Renaissance—(Same as ENGLISH 310.) The emergence of early modern transatlantic culture, emphasizing how canonical works of the Renaissance may be reimagined in a colonial context and how the productions of the colonial Americas make sense as Renaissance works. Topics: mestizaje and creole identity, gender and sexuality, law, religion and the church, mining, commerce, and government. European and American authors: Thomas More, Philip Sidney, Thomas Lodge, William Shakespeare, the Inca Garcilaso de la Vega, and lesser known figures.

5 units, Aut (Greene)

COMPLIT 310A. The Novel of Modernity—(Same as ENGLISH 310A.) Formal features of the novel of modernity focusing on the relationships among modernism, modernization, and modernity in the late 19th- and 20th-century novel in a comparative, transnational context. The force of the social historical upon the aesthetic, especially in relation to the category of subaltern modernity. Readings: Cather, Wharton, Faulkner, Juan Rulfo, García Márquez, and Toni Morrison.

5 units, Win (Saldívar)

COMPLIT 310S. Civilizing Process: Paradigms of Society and Culture in Modern Russian Literature and Film—(Enroll in SLAVLIT 310.)

2-4 units, Win (Freidin)

COMPLIT 319. Revolutionary Tides—(Same as FRENGEN 319, ITALGEN 319.) Research seminar. The importance of collectivity in the era of popular sovereignty. Focus is on the role of the revolutionary crowd in the modern cultural imagination. Sources include 19th- and 20th-century crowd theorists, artworks, literature, and films dealing with crowds from the French Revolution to contemporary flash mobs. Students research and write labels for an exhibition at the Cantor Center for the Visual Arts, and assist in designing installations and programming.

3-5 units, Aut (Schnapp)

COMPLIT 326. The Rhetoric of Eros: Plato and Augustine—(Same as CLASSGEN 326.) Plato's *Phaedrus* and Augustine's *Confessions* emphasizing sexuality, textuality, memory, time, and narrative. Ancient and modern theoretical approaches. Recommended: knowledge of Greek or Latin.

4-5 units, Aut (Nightingale)

COMPLIT 330. Materials and Methods for the Study of Poetry—(Same as ENGLISH 350C.) For graduate students in all national literatures and for comparatists. The intellectual and professional tools relevant to scholarship on poetry in any language. Theoretical issues and practical knowledge of forms, techniques, and cultural formations in verse. Topics such as lineation, stanzas, meters, material and concrete poems, prose poems, translation voices, and personae.

3-5 units (Greene) not given 2004-05

COMPLIT 333. Rational and Irrational Choices: Literature and Being Together—Can the modern novel offer a means of imagining being together? Focus is on discursive regimes that postulate two modes of action: an economic logic of rationality and individual preferences, and a humanistic notion of community and obligation. Readings of philosophy, political and social theory, literary theory and criticism, and novels that address these issues in their imaginative spaces.

5 units, Spr (Palumbo-Liu)

COMPLIT 334A. The Modern Tradition I—(Same as MTL 334A.) Preference to first-year graduate students in Modern Thought and Literature and Comparative Literature. Basic texts that have formed the foundation for contemporary cultural and social theory including Marx, Weber, Freud, Durkheim, and Boas.

5 units, Aut (Palumbo-Liu)

COMPLIT 334B. The Modern Tradition II—(Enroll in MTL 334B, CASA 334B.)

3-5 units, Win (Mankekar)

COMPLIT 344. Ethical Criticism: Poststructuralism, Feminism, Psychoanalysis—(Enroll in CASA 344.)

5 units, Spr (Domanska)

COMPLIT 369. Introduction to Graduate Studies: Criticism as Profession—(Same as GERLIT 369.) Major texts of modern literary criticism in the context of professional scholarship today. Readings by critics such as Lukács, Auerbach, Frye, Ong, Benjamin, Adorno, Szondi, de Man, Abrams, Bourdieu, Vendler, and Said. Contemporary professional issues including scholarly associations, journals, national and comparative literatures, university structures, and career paths.

5 units, Aut (Berman)

COMPLIT 373D. Shakespeare, Islam, and Others—(Same as ENGLISH 373D.) Shakespeare and other early modern writers in relation to new work on Islam and the Ottoman Turk in early modern studies. *Othello*, *Twelfth Night*, *Titus Andronicus*, *The Merchant of Venice*, and other Shakespeare plays. Kyd's *Solyman and Perseda*, Daborne's *A Christian Turned Turk*, Massinger's *The Renegado*, Marlowe's *The Jew of Malta*, and literary and historical materials.

5 units (Parker) not given 2004-05

COMPLIT 375. Intellectuals, Literature, and Politics in France and in the Francophone World—(Same as FRENLIT 375.) Intellectuals' positions on major issues of the 20th century and their reflection in literature, with a focus on decolonization (the Algerian War) and immigration. Questions such as nation and nationalism, and history and memory. Readings include Sartre, Camus, Fanon, Djebbar, Ben Jelloun, Césaire, Begag, Cixous, Derrida, Nora, Noiriel, and Stora. Visual materials. In French.

3-5 units, Spr (Boyi)

COMPLIT 395. Research

1-15 units, Aut, Win, Spr (Staff)

COMPLIT 395A,B,C. Philosophical Reading Group—(Same as FRENGEN 395A,B,C, ITALGEN 395A,B,C.) Discussion of one contemporary or historical text from the Western philosophical tradition per quarter in a group of faculty and graduate students. For admission of new participants, a conversation with H. U. Gumbrecht or R. Harrison is required.

1 unit, Aut, Win, Spr (Gumbrecht)

COMPLIT 396L. Pedagogy Seminar I—(Same as ENGLISH 396L.) Required for first-year Ph.D students in English, Modern Thought and Literature, and Comparative Literature (except for Comparative Literature students doing their teaching in a foreign language). Preparation for surviving as teaching assistants in undergraduate literature courses. Focus is on leading discussions and grading papers.

2 units, Aut (Lerer)

COMPLIT 399. Dissertation

1-15 units, Aut, Win, Spr, Sum (Staff)



COMPARATIVE STUDIES IN RACE AND ETHNICITY (CSRE)

Director: Paula Moya

Curriculum Committee: Teresa LaFromboise, Purnima Mankekar, Paula Moya, John Rickford, Claude Steele (ex officio), Yvonne Yarbro-Bejarano, Steven Zipperstein

Affiliated Faculty and Teaching Staff: David Abernethy (Political Science, emeritus), Anthony Antonio (Education), Rick Banks (Law), Lucius Barker (Political Science, emeritus), Donald Barr (Human Biology), John Baugh (Education), Joel Beinin (History), Karen Biestman (Native American Studies), Michele Birnbaum-Elam (English), Albert Camarillo (History), Darshan Elena Campos (Chicana/o Studies), Martin Carnoy (Education), Clayborne Carson (History), Gordon Chang (History), Karen Cook (Sociology), Irene Corso (Spanish and Portuguese), Larry Cuban (Education), Linda Darling-Hammond (Education), Wei Ming Dariotis (Asian American Studies), Carol Delaney (Cultural and Social Anthropology), Carolyn Duffey (Comparative Studies in Race and Ethnicity), Jennifer Eberhardt (Psychology), Paulla Ebron (Cultural and Social Anthropology), Penny Eckert (Linguistics), Arnold Eisen (Religious Studies), Harry Elam (Drama), Luis Fraga (Political Science), George Fredrickson (History, emeritus), Estelle Freedman (History), Claudine Gay (Political Science), Vera Grant (African and African American Studies), Akhil Gupta (Cultural and Social Anthropology), Elizabeth Hansot (Political Science, emeritus), Miyako Inoue (Cultural and Social Anthropology), Gavin Jones (English), Terry Karl (Political Science), Pamela Karlan (Law), Michael Kirst (Education), Matthew Kohrman (Cultural and Social Anthropology), Jan Krawitz (Communication), Teresa LaFromboise (Education), Herbert Leiderman (Psychiatry, emeritus), Yvonne Maldonado (Pediatrics), Purnima Mankekar (Cultural and Social Anthropology), Hazel Markus (Psychology), Monica McDermott (Sociology), Raymond McDermott (Education), James Montoya (Comparative Studies in Race and Ethnicity), Cherríe Moraga (Drama), Joanna Mountain (Anthropological Sciences), Paula Moya (English), Norman Naimark (History), Na'ilah Nasir (Education), Marguerite Bich Nguyen (Asian American Studies), Hilton Obenzinger (Vice Provost for Undergraduate Education), Marcia Ochoa (Chicana/o Studies), Susan Olzak (Sociology), Amado Padilla (Education), David Palumbo-Liu (Comparative Literature), Jack Rakove (History), Arnold Rampersad (English), Robert Reich (Political Science), John Rickford (Linguistics), Cecilia Ridgeway (Sociology), Richard Roberts (History), Aron Rodrigue (History), Richard Rosa (Spanish and Portuguese), Michael Rosenfeld (Sociology), Ramón Saldivar (English), Stephen Sano (Music), Debra Satz (Philosophy), JoEllen Shively (Native American Studies), C. Matthew Snipp (Sociology), Paul Sniderman (Political Science), Sandra Soo-Jin Lee (Cultural and Social Anthropology), Claude Steele (Psychology), James Steyer (Comparative Studies in Race and Ethnicity), Ewart Thomas (Psychology), Jeanne Tsai (Psychology), David Tyack (Education, emeritus), Guadalupe Valdés (Education; Spanish and Portuguese), Richard White (History), Michael Wilcox (Cultural and Social Anthropology), Joy Williamson (Education), Carolyn Wong (Political Science), Sylvia Yanagisako (Cultural and Social Anthropology), Yvonne Yarbro-Bejarano (Spanish and Portuguese), Bob Zajonc (Psychology), Steven Zipperstein (History)

Teaching Fellows: Lisa Arellano, Graciela Borsato, Todd Dapremont

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Courses given in CSRE have the subject code CSRE. For a complete list of subject codes, see Appendix.

UNDERGRADUATE PROGRAMS

MAJORS

CORE CURRICULUM

The Interdisciplinary Program in Comparative Studies in Race and Ethnicity (CSRE) provides students the opportunity to structure a major or minor in comparative ethnic studies or to focus their course work in a single ethnic studies area. Four majors and minors (Asian American Studies, Comparative Studies, Chicana/o Studies, and Native American Studies) are offered as part of CSRE. All courses taken for the major must be taken for a letter grade. In addition, majors in the Program in African and African American Studies and in the Program in Jewish Studies enroll in the core curriculum offered by CSRE. The directors of the programs and of each major constitute the CSRE curriculum committee, the policy making body for the interdisciplinary program.

Students who declare any of the five majors participate in a common curriculum of the CSRE consisting of at least two introductory core courses and a senior seminar. Individually designed majors in Jewish Studies may also enroll in the CSRE core curriculum.

MINORS

Students who wish to minor in the study areas must complete six courses (a minimum of 30 units) from the approved CSRE course list, two of which must be introductory core courses. Proposals for the minor must be approved by the director of each study area.

DIRECTED READING AND RESEARCH

Directed reading and research allows students to focus on a special topic of interest. In organizing a reading research plan, the student consults with the director of the major and one or more faculty members specializing in the area or discipline.

SENIOR SEMINAR

Research and the writing of the senior honors thesis or senior paper is under the supervision of a faculty project adviser. The seminar is offered in Autumn Quarter, and discussions take students through the process of research (conceptualization, development of prospectus, development of theses, research, analysis, and writing). This course meets the Writing in the Major requirement (WIM). Those who opt to write senior papers are organized into tutorial groups in Autumn Quarter. All CSRE-related students, even those who opt to write honors theses in other departments and programs, must enroll in CSRE 200X, Senior Seminar.

RELATED PROGRAMS

CSRE-related majors have several unique opportunities available to them. The program supports full-time paid summer internships for those who apply to work in a non-profit or government agency in a public policy-related area. The CSRE Public Policy/Leadership Institute is a two week, pre-Autumn Quarter seminar that provides exposure to critical public policy issues and is taught by a leading faculty member. The residence-based institute provides room and board and all seminar materials for participants, including a visit to Sacramento to meet with policy makers. The CSRE program also sponsors quarterly career workshops and informal luncheons for all majors and minors.

HONORS

Majors in each of the study areas who meet academic qualifications (at least a grade point average of 3.5 in CSRE-related courses) may apply for admission. Majors are expected to participate in a Spring Quarter junior workshop in preparation for their honors thesis research. Prizes for the best undergraduate honors theses are awarded annually by the Curriculum Committee of CSRE.

AFRICAN AND AFRICAN AMERICAN STUDIES (AAAS)

Director: John Rickford

Since 1997-98, AAAS has been a CSRE-related major. For major and minor descriptions and requirements, see the "African and African American Studies" section of this bulletin.

ASIAN AMERICAN STUDIES

Director: Purnima Mankekar

Asian American Studies (AAS) provides an interdisciplinary approach to understanding the historical and current experiences of persons of Asian ancestry in the United States. In using the term "Asian American," the AAS faculty recognize that the term seeks to name a rapidly developing, complex, and heterogeneous population and that there is neither a single Asian American identity nor one community that comprises all Asian Americans. Asian Americans include those with ancestral ties to countries or regions in East Asia, South Asia, Southeast Asia, or the Philippines, among others.

AAS brings together courses that address the artistic, historical, humanistic, political, and social dimensions of Asian Americans and is an appropriate course of study for students interested in a variety of concerns related to Asian Americans, including: artistic and cultural contributions, current social significance, historical experiences, immigration, intellectual, policy issues, relationships with other social groups, and the construction of Asian American as it addresses important theoretical and practical issues.

REQUIREMENTS

AAS offers undergraduates opportunities for either a major or a minor. In addition to the 15 units in the CSRE core curriculum, 45 units are distributed as follows: 5 units in a course with an international dimension; 30 units in Asian American focus courses selected from among historical studies, social sciences, and humanities; and 10 units in courses offering comparative perspectives. In certain instances, students are able to apply credit from the study of an Asian language to help meet requirements and receive a special citation for relevant language study. For students already fluent in an Asian language, the citation may also be earned by using the language in a substantial way in the research for their senior papers. An honors option is available. Minors take 30 units in a program of study similar in form to that of majors.

Students interested in the major or minor in AAS work with a faculty adviser to develop a specific program of study. Proposals for the major and minor, and admission to the CSRE honors program must be approved by the director. The policies and programs for the major and minor are guided by the CSRE curriculum committee.

CHICANA/O STUDIES

Director: Yvonne Yarbrow-Bejarano

Chicana/o Studies is an interdisciplinary major focusing on the Mexican-origin population of the U.S., the second largest ethnic group in the nation. Students who major or minor in Chicana/o Studies have an opportunity to select from a wide variety of courses in the humanities and social sciences as well as selected courses offered by affiliated faculty in the School of Education. In addition to the CSRE introductory core courses, students who major and minor in Chicana/o Studies are required to enroll in ENGLISH 172A/HISTORY 162, Introduction to Chicana/o Life and Culture.

REQUIREMENTS

Together with their faculty mentors, majors design a thematic concentration consisting of eight courses (40 units). The substantial number of courses available across the disciplines permits majors to develop unique and innovative thematic concentrations. Students also have opportunities to participate in public service-learning internships related to their academic course of study. Proposals for the major and minor, and admission to the CSRE honors program must be approved by the director. The policies and programs for the major and minor are guided by the CSRE curriculum committee.

A Spanish Language Proficiency option is offered to majors interested in using Spanish in their course work or for their research. This option, modeled on programs of foreign language study across the curriculum at other institutions, is aimed at students who have a strong interest in using the Spanish language proficiency they have acquired in meaningful contexts outside of foreign language courses. There are several ways

to complete the Spanish Language Proficiency option. Consult with the Director of Chicana/o Studies for details about these options.

Students who wish to minor in Chicana/o Studies must enroll in one CSRE introductory core course (the course must be comparative in nature) and ENGLISH 172A/HISTORY 162, Introduction to Chicana/o Life and Culture. The remaining four courses, 20 units, must be designed around a general theme or topic.

COMPARATIVE STUDIES IN RACE AND ETHNICITY

Director: Paula Moya

The major and minor in Comparative Studies in Race and Ethnicity (CSRE) offer students a unique opportunity in higher education: to study the topics of race and ethnicity from comparative national and international perspectives. How to manage and to understand ethnic differences and conflicts has long been a central issue in international affairs, especially since the end of the Cold War, and an intense debate has developed in the United States on how to achieve justice and equality in an ethnically diverse, multicultural society. The themes of both interethnic cooperation and conflict are critical for comprehending the history and current social reality of racial and ethnic groups worldwide. Students have an opportunity to structure a major or minor through CSRE that encourages the study of these and other important issues facing the U.S. and other societies.

REQUIREMENTS

Students who major in CSRE enroll in the core curriculum, and in consultation with the director of the program and a faculty mentor, develop a thematic course of study focusing on the comparative dimensions of race and ethnicity. Though majors and minors in CSRE must complete the CSRE core introductory courses before they focus their work on the thematic concentration, students have great flexibility to structure and design their comparative curriculum. For example, students may opt to develop a concentration comparing two or more groups within the U.S., or they may choose to study groups in the U.S. in comparison to ethnic groups elsewhere in the world. Or, they may opt to study the diaspora of a single group or the sovereignty of indigenous peoples within and across different national contexts. In different examples of thematic concentrations for the CSRE major, students may prefer to study issues of international migration or how social constructions of racial identities are influenced by gender or class.

The thematic course of study developed by CSRE majors must be approved by the CSRE director. Proposals for the major and minor, and admission to the CSRE honors program must be approved by the director. The policies and programs for the major and minor are guided by the CSRE curriculum committee.

TAUBE CENTER FOR JEWISH STUDIES

Directors: Aron Rodrigue, Steven Zipperstein

Jewish Studies is an affiliated program of CSRE. For program and course descriptions, see the "Jewish Studies" section of this bulletin.

NATIVE AMERICAN STUDIES

Director: Teresa LaFromboise

Native American Studies provides an intensive approach to understanding the historical and contemporary experiences of Native American people. Attention is paid not only to the special relationship between tribes and the federal government, but to issues across national boundaries, including tribal nations within Canada, and North, Central, and South America. In using the term "Native American," the NAS faculty recognize the heterogeneous nature of this population. Native Americans include the Alaska Native population, which comprises Aleuts, Eskimo, and other Native American people residing in Alaska.

The purpose of the Native American Studies major and minor is to introduce students to a broad range of approaches in the academic study of Native American people, history, and culture. Students who major in Native American Studies have the opportunity of doing advanced work

in a number of related fields, including literature, sociology, education, and law. In addition to specialized course work on Native American issues, students also are expected to concentrate in a traditional discipline such as anthropology, history, or psychology to ensure they have a well rounded educational experience. The area of concentration and related course work should be selected in consultation with a faculty adviser in Native American Studies. All courses in the program in some way promote the ongoing discussion of how academic knowledge about Native Americans relates to the historical and contemporary experiences of Native American people and communities.

REQUIREMENTS

NAS offers undergraduates opportunities for either a major or minor. The major requires 60 units of course work. In addition to the 15 units of CSRE core courses, 45 units are distributed as follows: 30 units in Native American focus courses selected from among humanities and social sciences; 5 units in a course devoted to the methodologies, theories, or field research in a particular area of study; and 10 units in courses offering comparative perspectives. Students may acquire credit from a service-learning internship option. Minors take 30 units in a program of study similar in form to that of majors. Proposals for the major and minor, and admission to the CSRE honors program must be approved by the director. The policies and programs for the major and minor are guided by the CSRE curriculum committee.

COURSES

CORE

COMPARATIVE LITERATURE

COMPLIT 202. Comparative Fictions of Ethnicity
5 units, Win (Palumbo-Liu)

COMPARATIVE STUDIES IN RACE AND ETHNICITY

CSRE 200X. CSRE Senior Seminar—WIM
5 units, Aut (Arellano, Moya)

CULTURAL AND SOCIAL ANTHROPOLOGY

CASA 88. Theories in Race and Ethnicity
5 units, Win (Yanagisako)

PSYCHOLOGY

PSYCH 75. Cultural Psychology
5 units, Spr (Markus) alternate years, not given 2005-06

SOCIOLOGY

SOC 145. Race and Ethnic Relations
5 units (Olzak) not given 2004-05

THEMATIC FOR MAJORS AND MINORS

AFRICAN AND AFRICAN AMERICAN STUDIES

For courses in African and African American Studies with the subject code AFRICAAM, see the "African and African American Studies" section of this bulletin.

ASIAN AMERICAN STUDIES

ASNAMST 173D. Queer Asian American Literature—(Same as CSRE 173D.)
5 units, Win (Dariotis)

ASNAMST 174D. Vietnamese American Literature, Film, and History—(Same as CSRE 174D.) Vietnamese American lives and how Vietnam has been imagined in America. How Vietnamese American texts intervene in debates about cultural production, race, and transnationalism in Asian American studies and American literature. The relationship between these works and postmodernism. Aesthetic practices and concepts; relationships to other Asian American and American writers.

5 units, Spr (Nguyen)

ASNAMST 200R. Directed Research*1-5 units, Aut, Win, Spr (Staff)***ASNAMST 200W. Directed Reading***1-5 units, Aut, Win, Spr (Staff)***CHICANA/O STUDIES****CHICANST 120C. Latina/o Transnationalism, Cinema, and Performance**—(Same as CSRE 120C.)*5 units, Spr (Campos)*

CHICANST 121M. Developing Community Interventions: Research Design Practicum—(Same as CSRE 121M.) Prepares students to design responses to problems affecting communities, based on the history of community interventions in a Chicana/o movement context. Case studies; interpersonal, social, pedagogical, artistic, and communicative models for intervention. Methods of defining community, identifying problems, and creating responses. Final project to research, design, and propose a community-level intervention.

*5 units, Win (Ochoa)***CHICANST 200R. Directed Research***1-5 units, Aut, Win, Spr (Staff)***CHICANST 200W. Directed Reading***1-5 units, Aut, Win, Spr (Staff)***COMPARATIVE STUDIES IN RACE AND ETHNICITY**

CSRE 199. Pre-Honors Seminar—For majors interested in writing a senior honors thesis. Conceptualizing and defining a manageable honors project, conducting interdisciplinary research, the parameters of a literature review essay, and how to identify a faculty adviser.

*1 unit, Spr (Arellano)***CSRE 200R. Directed Research***1-5 units, Aut, Win, Spr (Staff)***CSRE 200W. Directed Reading***1-5 units, Aut, Win, Spr (Staff)***CSRE 200Y. CSRE Senior Honors Research***1-10 units, Win (Arellano, Moya)***CSRE 200Z. CSRE Senior Honors Research***1-10 units, Spr (Arellano, Moya)*

CSRE 203A. The Changing Faces of America: Strategies for Change in the 21st Century—For students with leadership potential who have studied these topics in lecture format. Focus is on analysis of race discrimination strategies, their relation to education reform initiatives, and the role of media in shaping racial attitudes in the U.S.

*5 units, Spr (Montoya, Steyer)***NATIVE AMERICAN STUDIES**

NATIVEAM 103S. Native American Women, Gender Roles, and Status—(Same as CSRE 103S, FEMST 103S.) Historical and cultural forces at work in traditional and contemporary Native American women's lives through life stories and literature. How women are fashioning gendered indigenous selves. Focus is on the diversity of Native American communities and cultures. GER:4c

5 units, Win (Shively)

NATIVEAM 109B. Indian Country Economic Development—(Same as CSRE 109B.) The history of competing tribal and Western economic models, and the legal, political, social, and cultural implications for tribal economic development. Case studies include mineral resource extraction, gaming, and cultural tourism. 21st-century strategies for sustainable economic development and protection of political and cultural sovereignty.

5 units, Spr (Biestman)

NATIVEAM 116. Language, Culture, and Education in Native North America—(Same as CSRE 116.) Communication and language in crosscultural education, including literacy and interethnic communication in relation to native classrooms in the mainland U.S., Alaska, and nations and territories of the Pacific. Focus is on implications of social, cultural, and linguistic diversity for educational practice in bridging intercultural differences between schools and native communities.

5 units (Nelson-Barber) not given 2004-05

NATIVEAM 117A. Diversity in Contemporary American Indian Cultures and Communities—(Same as CSRE 117A.) 1890 to the present. The demographic resurgence of American Indians, changes in social and economic status, ethnic identification and political mobilization, and institutions such as tribal governments and the Bureau of Indian Affairs. GER:3b

*5 units (Shively) not given 2004-05***NATIVEAM 200R. Directed Research***1-5 units, Aut, Win, Spr (Staff)***NATIVEAM 200W. Directed Reading***1-5 units, Aut, Win, Spr (Staff)***INTERDEPARTMENTAL OFFERINGS****ART AND ART HISTORY****ART STUDIO**

ARTSTUDI 110. Cartographies of Race: The Institute for Diversity in the Arts at Stanford

*5 units, Win (Elam)***COMPARATIVE LITERATURE**

COMPLIT 24Q. Ethnicity and Literature

5 units, Aut (Palumbo-Liu)

COMPLIT 168. Introduction to Asian American Culture

*3-5 units, Win (Palumbo-Liu)***CULTURAL AND SOCIAL ANTHROPOLOGY**

CASA 16. Native Americans in the 21st Century: Encounters, Identity, and Sovereignty in Contemporary America

5 units (Wilcox) not given 2004-05

CASA 71. Asian American Representation in Mass Media

4 units, Spr (Joo)

CASA 77/277. Japanese Society and Culture

5 units, Spr (Satsuka)

CASA 74. South Asian Histories and Cultures through Popular Film: Bollywood and Beyond

4 units (Mankekar) not given 2004-05

CASA 125. South Asian Diasporas

5 units, Spr (Ameeriar)

CASA 126. Mediating Desire: Gender, Race, and Representation

5 units, Spr (Ochoa)

CASA 135/235. Native Peoples of the Americas: Prehistory, Contacts, and Contemporary Debates

5 units (Wilcox) not given 2004-05

CASA 144/244. Sex, Blood, Kinship, and Nation

5 units (Delaney) not given 2004-05

CASA 145A. Poetics and Politics of Caribbean Women's Literature

5 units, Win (Duffey)

CASA 151/251. Cultural Studies

5 units, Aut (Joo)

CASA 183D. Border Crossings and American Identities

5 units, Aut (Duffey)

DANCE

DANCE 42. Dances of Latin America

2 units, Win (*Cashion*)

DANCE 43. Afro-Brazilian and Afro-Peruvian Dance

2 units, Win (*Cashion*)

DANCE 168. Dance and Culture in Latin America

4 units, Spr (*Cashion*)

DRAMA

DRAMA 17N. *Del Otro Lado*: Latino/a Performance Art in the U.S.— (Same as SPANLIT 178N.)

3 units, Win (*Moraga*)

DRAMA 110. Cartographies of Race: The Institute for Diversity in the Arts at Stanford

5 units, Win (*Elam*)

DRAMA 157J. Black Social Dance Performance Workshop

4 units, Aut (*Hayes*)

DRAMA 163/263. Performance and America

5 units (*Elam*) not given 2004-05

EDUCATION

EDUC 149/249. Theory and Issues in the Study of Bilingualism— (Same as SPANLIT 207.)

3-5 units, Aut (*Valdés*)

EDUC 177/277. Education of Immigrant Students: Psychological Perspectives

4 units (*Padilla*) not given 2004-05

EDUC 179/279. Urban Youth and Their Institutions: Research and Practice

4-5 units, Aut (*McLaughlin*)

EDUC 193B. Peer Counseling: Chicano Community

2 units, Aut (*Martinez*)

EDUC 193C. Peer Counseling: The African American Community

2 units, Aut (*Edwards*)

EDUC 193F. Peer Counseling: Asian American Community

2 units, Spr (*Brown*)

EDUC 193N. Peer Counseling: Native American Community

2 units (*Simms, Martinez*) not given 2004-05

EDUC 201. History of Education in the United States

4 units, Win (*Labaree*)

EDUC 201A. History of African American Education

3-4 units, Win (*Williamson*)

EDUC 201B. Education for Liberation

3-4 units, Spr (*Williamson*)

EDUC 340X. American Indian Mental Health and Education

3-5 units, Spr (*LaFromboise*)

EDUC 381. Multicultural Issues in Higher Education

4-5 units (*Antonio*) not given 2004-05

ENGLISH

ENGLISH 43/143. Introduction to Afro-American Literature

3-5 units, Spr (*Birnbaum*)

ENGLISH 139E. Irish American Literature

5 units, Aut (*Jockers*)

ENGLISH 146C. Hemingway, Hurston, Faulkner, and Fitzgerald

5 units, Aut (*G. Jones*)

ENGLISH 152G. Harlem and Chicago Renaissances

5 units, Spr (*Birnbaum*)

ENGLISH 172A. Introduction to Chicana/o Literature and Culture— (Same as HISTORY 162.)

5 units, Aut (*Camarillo, Moya*)

ETHICS IN SOCIETY

ETHICSOC 133. Ethics and Politics in Public Service—(Same as POLISCI 133.)

5 units (*Reich*) not given 2004-05

FEMINIST STUDIES

FEMST 101. Introduction to Feminist Studies—(Same as HISTORY 173C.)

5 units, Win (*Arellano*)

FEMST 120. Introduction to Queer Studies

4-5 units, Aut (*Arellano*)

HISTORY

HISTORY 59. Introduction to Asian American History

5 units, Aut (*Chang*)

HISTORY 137/337. The Holocaust

5 units, Win (*Rodrigue*)

HISTORY 148C. Africa in the 20th Century

5 units, Aut (*R. Roberts*)

HISTORY 150B. Introduction to African American History: The Modern African American Freedom Struggle

4-5 units, Spr (*Carson*)

HISTORY 187B. The Middle East in the 20th Century

5 units, Aut (*Al-Qattan*)

HISTORY 251A. Poverty and Homelessness in America

5 units, Win (*Camarillo*)

HISTORY 251B. Poverty and Homelessness in America II

5 units, Spr (*Camarillo*)

HISTORY 256A. California History

5 units, Win (*Camarillo*)

HISTORY 265/365. New Research in Asian American History

5 units, Spr (*Chang*)

JAPANESE GENERAL

JAPANGEN 77. Telling the Difference: Reading Race in Modern Japan

4 units, Aut (*Scott*)

LINGUISTICS

LINGUIST 146. Language and Gender

4 units (*Eckert*) not given 2004-05

LINGUIST 150. Language in Society

4-5 units, Aut (*Buchstaller*)

MUSIC

MUSIC 16Q. *Ki ho'alu*: The New Renaissance of a Hawaiian Musi- cal Tradition

3 units, Aut (*Sano*)

MUSIC 17Q. Perspectives in North American Taiko

4 units, Spr (*Sano, Uyechi*)

POLITICAL SCIENCE

POLISCI 111. Peace Studies—(Same as PSYCH 165.)

5 units, Spr (*Bland, Ross, Holloway*)

POLISCI 121. Urban Politics

5 units, Win (*Fraga*)

POLISCI 131. Children's Citizenship: Justice Across Generations*5 units, Spr (Adcock)***POLISCI 141. The Global Politics of Human Rights***5 units, Win (Karl)***POLISCI 225R. Black Politics in the Post-Civil Rights Era***5 units, Win (Gay)***POLISCI 325S. Race and Place in American Politics***5 units, Spr (Gay)***PSYCHOLOGY****PSYCH 215. Mind, Culture, and Society***3 units, Win (Markus, Steele)***PSYCH 217. Topics and Methods in Cultural Psychology***3 units (Tsai) not given 2004-05***SOCIOLOGY****SOC 45Q. Understanding Race and Ethnicity in American Society***5 units, Spr (Snipp)***SOC 120. Interpersonal Relations***5 units, Aut (Ridgeway)***SOC 138/238. American Indians in Comparative Historical Perspective***3-5 units, Aut (Snipp)***SOC 139/239. American Indians in Contemporary Society***5 units, Win (Snipp)***SOC 140. Introduction to Social Stratification***5 units, Spr (Sandefur)***SOC 141A/241A. Social Class, Race/Ethnicity, Health***4 units, Win (Barr)***SOC 142. Sociology of Gender***3-5 units, Spr (Ridgeway)***SOC 145/245. Race and Ethnic Relations***5 units (Olzak) not given 2004-05***SOC 148/248. Racial Identity***5 units (McDermott) not given 2004-05***SOC 149/249. The Urban Underclass***5 units (Rosenfeld) not given 2004-05***SOC 220. Interpersonal Relations***5 units, Aut (Ridgeway)***SPANISH LITERATURE****SPANLIT 101N. Visual Studies and Chicana/o Art***3-5 units, Aut (Yarbro-Bejarano)***SPANLIT 206. Language Use in the Chicano Community***3-5 units, Aut (Valdés)***SPANLIT 283. Chicana Feminism***3-5 units, Win (Yarbro-Bejarano)***CULTURAL AND SOCIAL ANTHROPOLOGY***Emeriti (Professors)* Harumi Befu, George A. Collier, Jane F. Collier, Charles O. Frake, James L. Gibbs, Jr., Benjamin D. Paul, Renato I. Rosaldo, G. William Skinner, George D. Spindler, Robert B. Textor*Chair:* Ian Hodder*Professors:* James Ferguson, Ian Hodder, Sylvia J. Yanagisako
Associate Professors: Carol L. Delaney (on leave), Paulla Ebron (on leave), Akhil Gupta (on leave), Liisa Malkki, Purnima Mankekar*Assistant Professors:* Miyako Inoue (on leave), Sarah S. Jain (on leave), Matthew Kohrman, Barbara Voss, Michael V. Wilcox (on leave)*Lecturers:* Amy Burce, Tristan Carter, Keila Diehl, Carolyn Duffey, Claudia Engel, Sangeeta Luthra*Courtesy Professors:* Penelope Eckert, Raymond McDermott*Visiting Professors:* William Beeman, Alma Kunanbaeva*Visiting Associate Professors:* Amita Baviskar, Laurie Hart*Visiting Assistant Professors:* Ewa Domanska, Shiho Satsuka*Affiliated Faculty:* Susan Cashion, Jean-Pierre Dupuy, James A. Fox, Shirley Brice Heath, Barbara Koenig, Hazel R. Markus, Thomas P. Rohlen, Michael Shanks*Teaching Fellows:* Rochelle Davis, Bart Ryan, Helle Rytkonen, Christina Schwenkel*Teaching Affiliates:* Lalaie Ameeriar, Jennifer Chertow, Cari Costanzo-Kapur, Kelly Freidenfelds, Rachael Joo, Yoon-Jung Lee, Hideko Mitsui, Marcia Ochoa*Mail Code:* 94305-2145*Phone:* (650) 723-3421*Email:* anthrocasa@stanford.edu*Web Site:* <http://anthroCASA.stanford.edu>

Courses given in Cultural and Social Anthropology have the subject code CASA. For a complete list of subject codes, see Appendix.

The courses offered by this department are designed to: (1) provide undergraduates with instruction in cultural and social anthropology; (2) provide undergraduate majors in anthropology with a program of work leading to the bachelor's degree; and (3) prepare candidates for advanced degrees in cultural and social anthropology.

Cultural and social anthropology addresses a wide range of issues in the comparative study of society and culture. These include issues of race, class, national origin, gender, sexual orientation, and religion as they are shaped by the experiences of education, history, and migration through which people in past and contemporary societies have defined themselves in relation to others. The scope of cultural and social anthropology includes our own society and culture as well as those of other parts of the world, especially as these are drawn together and shape one another in increasingly transnational and global interactions.

The Department of Cultural and Social Anthropology offers a wide range of approaches to the various subfields and topics within anthropology including: archaeology, environmental anthropology, linguistics, medical anthropology, political economy, science and technology studies, and sociocultural anthropology. Methodologies for the study of micro- and macro-social processes are taught through the use of qualitative and quantitative approaches. Training is offered in ethnographic research; the collection and interpretation of oral histories, surveys, and archival materials; the analysis of material culture, including mapping, cataloguing, and interpretation of material objects; and methodologies in the performative arts, including visual and performing studies. The department provides students with excellent training in theory and methods to enable them to pursue graduate study in any of the above mentioned subfields of anthropology. Students interested in the biological and evolutionary approaches to anthropology are urged to consult the Department of Anthropological Sciences.

UNDERGRADUATE PROGRAMS

BACHELOR OF ARTS

The Department of Cultural and Social Anthropology (CASA) offers a B.A. degree in Cultural and Social Anthropology and an honors program. The major provides students with expertise for understanding social and cultural transformations from an international and cross-cultural perspective. In addition to gaining an excellent foundation for graduate research and study, students majoring in Cultural and Social Anthropology can pursue careers in government, international business, international development agencies, international education, law, mass media, non-profit organizations, and public policy.

Within the major, students may include course offerings in other departments such as Anthropological Sciences, Classics, Economics, English, History, Political Science, Psychology, and Sociology, as well as course offerings in programs such as African Studies, American Studies, Archaeology, Comparative Studies in Race and Ethnicity, East Asian Studies, Feminist Studies, Latin American Studies, Public Policy, and Urban Studies.

To declare a major in Cultural and Social Anthropology, students should contact the department's student peer adviser or student program coordinator. The department checklist for the major can be downloaded in .pdf format from <http://www.stanford.edu/dept/anthroCASA/programs/undergrad.html>. The checklist must be signed by the CASA faculty program adviser for the major. Submit the checklist to the student program coordinator and apply for the major in AXESS.

All undergraduate majors in Cultural and Social Anthropology (CASA) must fulfill the following requirements:

1. A program of 65 units, with at least 40 units in Cultural and Social Anthropology. The remaining 25 units may be taken from courses in related departments, including Anthropological Sciences, or transferred from other anthropological study programs, such as overseas programs. The 65 units must form a coherent program of study and be approved by the student's faculty adviser.
2. A grade of 'B-' or better in CASA 90. This course is required of all CASA majors and should be taken within a year of declaring the major or before the end of the junior year. It introduces students to anthropological theory and prepares them for upper-division courses in the department.
3. The units required for the CASA major must include at least one course from four of the six topical categories listed below:
 - a) Archaeology
 - b) Gender and Feminism
 - c) Globalization and Transnationalism
 - d) Linguistic and Symbolic Anthropology
 - e) Race and Ethnicity
 - f) Science, Technology, or Medicine
4. Students must choose a concentration, taking at least 15 units in three or more courses on one theme or topic. Concentrations can be defined by subject matter or cultural area. Some examples of themes for a concentration are: cultural studies, economic development, kinship, mass media, material culture, migration and immigration, political economy, popular culture, race and ethnicity, religion, urban cultures, or a particular culture area, that is, Japan, Europe, South Asia. Students must have areas of concentration approved by their advisers.
5. A minimum of 15 units must be in CASA seminars numbered 100 or above.
6. Competence in a foreign language beyond the first-year level. Such competence is usually demonstrated by completing a 5 unit course at the second-year level with a grade of 'B-' or better. The requirement may be met by special examination administered through the Language Center.
7. 10 units from IHUM 27A,B (Introduction to the Humanities) may be counted towards the major. Students whose programs require non-English language study as part of a geographical or linguistics focus may ask their faculty adviser to approve up to 5 units from language courses toward the degree if such courses are at the second-year level and above, or are in a second non-English language. No more than

10 units of CASA 96, Directed Individual Study, may be counted towards the major, and may only be included among the 25 "related units" permitted for the major. All required units for the undergraduate degree program must be passed with a grade of 'C' or better, and not more than 10 (maximum of 5 units in Cultural and Social Anthropology and 5 units in related subjects) of the required 65 units may be taken for a "satisfactory/no credit" grade.

Majors are strongly encouraged to develop field research projects under the supervision of a CASA faculty member. The department has research grants available to support individually designed research, faculty mentoring research, and public service research in cultural and social anthropology. Eligibility for application to the research grants programs requires that a student have completed a minimum of two CASA courses with a grade point average of 3.3 (B+) or better. One of the two courses may be completed in the quarter in which the grant application is submitted to the department. Michelle Z. Rosaldo Summer Field Research grant applications for individually designed field research are due by the end of the fifth week in Winter Quarter. Faculty Mentoring and Public Service grant applications are due by the end of the fifth week in Autumn, Winter, or Spring quarters. Required course work for the research grants program includes CASA 93, Prefield Research Seminar, and CASA 94, Postfield Research Seminar. Suggested course work for the research grants program includes CASA 95A, Research in Anthropology, CASA 96, Directed Individual Study, and CASA 199, Senior and Master's Thesis Writing Workshop. Contact the student program coordinator for more information.

Prospective majors may meet with the chair of the Undergraduate Committee and/or the undergraduate peer adviser for initial advice on choosing an appropriate faculty adviser in the department. In consultation with their faculty advisers, students must develop a coherent program of study for the major. Students are required to submit the application form for the major, including their completed proposed plan of study, to the student program coordinator, no later than the beginning of the Winter Quarter of the junior year.

Majors are required to meet with their faculty advisers at least once every quarter. Each student's progress towards fulfilling the major requirements is recorded in a file kept in the student program coordinator's office. It is the student's responsibility to see that this file is kept up to date.

MINORS

The department checklist for the minor can be downloaded in .pdf format from <http://www.stanford.edu/dept/anthroCASA/programs/undergrad.html>. The checklist must be signed by the CASA faculty program adviser for the minor. Submit the checklist to the student program coordinator and apply for the minor in AXESS.

Requirements for the minor are:

1. A faculty adviser in Cultural and Social Anthropology (assistance may be obtained from the department's student program coordinator).
2. 30 units of CASA course work. IHUM 27A,B may be applied to the 30 units. Only 5 units of directed individual study may apply towards the 30 units in the minor. All units for the minor must be passed with a grade of 'C' or better
3. Up to 10 of the 30 units may be taken for instructor-elected, satisfactory/no credit grade.
4. At least 15 of the 30 units must be from CASA 70 course work, or above.
5. A minimum of 5 of the 30 units must be taken in an area course numbered between CASA 30 and 130B.

Deadline for Declaring the Minor—Students must complete the declaration process (both planning form submission and Axess registration) by the last day of the quarter, two quarters prior to degree conferral (for example, by the last day of Autumn Quarter if Spring graduation is intended).

SENIOR PAPER AND DEPARTMENTAL HONORS

The senior paper program in Cultural and Social Anthropology provides majors the opportunity to conduct original research under the guidance of a faculty advisor. The senior paper program is open to all majors in the department. Students must initiate their participation in the senior paper program by filing an application of intent with the student program coordinator. The application must include a description of the proposed project, a program of study, and a letter of approval from a faculty sponsor. Students are encouraged to apply to the senior paper program in their junior year prior to initiating fieldwork or other research. The senior paper application of intent must be submitted no later than the second week of Autumn Quarter in the senior year.

All CASA majors are encouraged to write a senior paper. Majors should begin research for a senior paper during their junior year with guidance from their CASA faculty adviser. At the latest, department majors must submit an application of intent to write a senior paper to the student program coordinator no later than the end of the second week of Autumn Quarter in the senior year. Enrollment in CASA 95A, Research in Anthropology, is recommended during Autumn and Winter quarters. The Senior Paper Checklist must be completed, signed by the program adviser, and handed in to the student program coordinator by the end of the second week in Autumn Quarter in the senior year. Students must enroll in CASA 95B, Senior Paper, in the final quarter in the undergraduate degree program before graduating. The senior paper is submitted in the final quarter before graduation. For more information, see the student program coordinator.

All CASA majors are encouraged to write an honors paper. Majors should begin research for an honors paper prior to the last quarter of the junior year with guidance from their CASA faculty adviser. At the latest, department majors must submit an application of intent to write an honors paper to the student program coordinator no later than the end of Spring Quarter (or the third quarter) in the junior year. Department majors are eligible to apply for honors candidacy with a 3.5 GPA in the department major and a 3.0 GPA in overall course work. Enrollment in CASA 95A, Research in Anthropology, is recommended during Autumn and Winter quarters. The Honors Checklist and Timeline must be completed, signed by the program adviser, and handed in to the student program coordinator by the end of the second week in Autumn Quarter in the senior year. Students must enroll in CASA 95B, Senior Paper, in the final quarter in the undergraduate degree program before graduating. A senior paper to be considered for departmental honors is submitted in the final quarter before graduation. Senior papers with a letter grade of 'A-' or better may be awarded departmental honors. For more information, see the student program coordinator.

GRADUATE PROGRAMS

University requirements for the degrees of Master of Arts and Doctor of Philosophy are described in the "Graduate Degrees" section of this bulletin.

MASTER OF ARTS

The Department of Cultural and Social Anthropology offers the M.A. degree to four groups of students: (1) Stanford undergraduates who enroll in the coterminal program; (2) Stanford graduate students taking advanced degrees in other departments or schools at Stanford who enroll in the terminal M.A. program; (3) Ph.D. students in Cultural and Social Anthropology who fulfill the M.A. requirements on the way to the Ph.D. degree; and (4) students who apply from outside Stanford for entry into the terminal M.A. program.

Applicants whose ultimate goal is the Ph.D. degree should apply directly to the Ph.D. program. Students accepted for the terminal M.A. degree program cannot transfer to the Ph.D. program; they must reapply on the same basis as other Ph.D. applicants and in competition with other Ph.D. applicants. Ph.D. students who decide to take the M.A. on the way to the Ph.D. are governed by separate requirements described in the department's *Guide to the Ph.D. Program*.

COTERMINAL B.A./M.A. PROGRAM

The deadline for graduate applications to the coterminal M.A. degree program is March 14, 2005. Prospective applicants should refer to the department's web site for information about application for graduate admission. Successful applicants for the M.A. program usually enter in Autumn Quarter. Applicants must submit a writing sample in English that demonstrates the ability to produce original analytical work at the graduate level. Applicants should also submit three letters of reference, recent original transcripts, and a statement of purpose.

The department prerequisite requirements for application to the coterminal M.A. program are listed below. Stanford undergraduates who are currently enrolled and interested in making a coterminal M.A. application to the department's graduate M.A. degree program are required to enroll in CASA 90, Theory in Cultural and Social Anthropology, and in a minimum of 10 additional units of CASA course work with a grade of 'A-' or better. An overall undergraduate GPA of 3.3 (B+) or better is also required.

Graduate enrollment at Stanford for at least three quarters of full tuition for a minimum of 45 units is required of all candidates for the master's degree, including coterminal students. Coterminal M.A. students in Cultural and Social Anthropology must take a minimum of 45 quarter units in social and cultural anthropology course work beyond the undergraduate degree with a grade point average (GPA) of 3.0 (B) or better. 45 units constitute the University minimum for the M.A. degree. However, the department requires 60 units of course work towards the coterminal M.A. degree. Of the required 60 units, 15 units may be accepted from previous undergraduate or other course work. Course work must be at or above the 100-level. 18 of the 45 units required from Cultural and Social Anthropology course work must be in courses designated primarily for graduate students (typically at least at the 200 level). Course work applied to the coterminal M.A. degree may not also be applied to the requirements for the undergraduate degree, or any other degree program.

Within the 45 units taken at Stanford, students must take CASA 290, History and Theory in Cultural and Social Anthropology, and two additional graduate-level seminars in the department. The remaining units may be made up of courses selected in consultation with the faculty adviser to meet the needs and interests of the student.

The coterminal program usually requires more than one year of study. However, full-time students entering the program with appropriate background can complete the coterminal program in one calendar year. To provide a meaningful M.A. program within a one-year period, advance planning of course work with an adviser is required.

A field or library research paper, read and approved by at least two departmental faculty members, must be presented. Coterminal students must submit an acceptable project/paper proposal for the master's paper to their faculty adviser for approval no later than the end of the fourth week in the first quarter of the graduate degree program. In addition, an acceptable Master's Degree Program Proposal must be submitted no later than the end of the fourth week in the first quarter of the graduate degree program. Coterminal students should enroll in CASA 399, Masters Research Paper, or CASA 801, TGR Project, in the final quarter during which they will submit the M.A. paper.

For University coterminal degree program rules and University application forms, see <http://registrar.stanford.edu/publications/#Coterm>.

TERMINAL MASTER'S DEGREE PROGRAM

The deadline for graduate applications to the terminal M.A. degree program is January 11, 2005. Prospective applicants should refer to the department web site for information about application for graduate admission. Successful applicants for the M.A. program may enter only in the following Autumn Quarter. Applicants must file a report of their Graduate Record Examination score electronically, and submit a writing sample in English that demonstrates the ability to produce original analytical work at the graduate level. Applicants should also submit three letters of reference, recent original transcripts, and a statement of purpose.

Graduate enrollment at Stanford for three consecutive quarters of full tuition for at least 45 units is required of all candidates for the master's

degree. M.A. students in Cultural and Social Anthropology must take a minimum of 45 units in social and cultural anthropology course work beyond the undergraduate degree with a grade point average (GPA) of 3.0 (B) or better. 45 units constitute the University minimum for the M.A. degree. Courses must be at or above the 100 level, and 18 of the 45 units must be in courses designated primarily for graduate students, typically at least at the 200 level.

Within the 45 units taken at Stanford, students must take CASA 302, Anthropological Research Methods, and CASA 290, History and Theory in Cultural and Social Anthropology; three additional graduate-level seminars in the department (usually offered at the 200 level or above); and three courses from one of these department tracks:

1. Feminist Anthropology
2. Heritage and Museum
3. Race and Ethnicity
4. Science, Technology, and Medicine
5. Globalization and Transnationalism

The remaining units may be made up of courses selected in consultation with the faculty adviser to meet the needs and interests of the student.

The M.A. program usually requires more than one year of study. However, full-time students entering the program with appropriate background can complete the M.A. program in one calendar year. All requirements for the M.A. degree must be completed within three calendar years (consecutive) after the student's first quarter of enrollment in the graduate M.A. degree program. The University allows no transfer units to the M.A. program. To provide a meaningful M.A. program within a one-year period, advance planning of course work with an adviser is required.

A field or library research paper, read and approved by at least two departmental faculty members, must be presented. Ph.D. students in the department may submit the first-year paper in fulfillment of this requirement. Terminal M.A. students may select a paper, written for one of the courses taken in Cultural and Social Anthropology, and present the extended paper to the faculty member responsible for the course in which the paper was written originally. Terminal M.A. students must submit an acceptable project/paper proposal for the master's paper to their faculty adviser for approval not later than the end of the fourth week in the first quarter of the graduate degree program. In addition, an acceptable Master's Degree Program Proposal must be submitted no later than the end of the fourth week of the first quarter of enrollment in the graduate degree program. Terminal M.A. students should enroll in CASA 399, Master's Research Paper, or CASA 801, TGR Project, in the final quarter during which they will submit the M.A. paper.

DOCTOR OF PHILOSOPHY

The deadline for graduate applications to the Ph.D. degree program is January 11, 2005. Prospective applicants should reference the department web site for information about application for graduate admission. Successful applicants for the Ph.D. program may enter only in Autumn Quarter. It is department policy not to defer graduate admission. Applicants must file a report of their Graduate Record Examination score electronically, and submit a writing sample in English that demonstrates the ability to produce original analytical work at the graduate level. Applicants should also submit three letters of reference, recent original transcripts, and a statement of purpose. In addition to a clear statement of research interests in the statement of purpose, it is especially important for those applicants who will choose the Archaeology Track to provide a detailed description of the area of specialization as well as the topical interests for dissertation research.

The Ph.D. program includes a number of required courses and examinations. It also allows the student to develop a flexible program reflecting special interests, under the supervision of a faculty committee chosen by the student. Students are encouraged to plan for completion of all work for the Ph.D. in five years.

The Ph.D. requirements for students who matriculate beginning 2004-05 are as follows (those matriculating earlier should consult the department's *Ph.D. Handbook* for their entering cohort year). Ph.D. students

in Cultural and Social Anthropology must take a minimum of 135 quarter units with a minimum grade point average (GPA) of 3.0 (B). The maximum allowable number of transfer units is 45.

1. Pass within the first year, with a grade of 'B+' or better:
 - a) at least three of the graduate-level courses in the department designated by the faculty as theory/evaluation courses, including CASA 301, History of Anthropological Theory, during Autumn Quarter; CASA 300, Reading Theory Through Ethnography, or CASA 373, Introduction to Archaeological Theory, during Winter Quarter.
 - b) CASA 302, Anthropological Research Methods, or a primary-level methods survey or advanced-level methods course, relevant to research interests, during Spring Quarter.
 - c) satisfy the department ethics requirement by attending a special meeting of CASA 302, Anthropological Research Methods, set aside for the review of ethics in Cultural and Social Anthropology.
 - d) at least 45 units of completed course work overall.
2. Submit an acceptable, substantial research paper (First-Year Paper) in the Spring Quarter. Register for CASA 395A, First-Year Paper, during Winter Quarter for 2-3 units and register for CASA 395B, First-Year Paper, during Spring Quarter for 2-3 units (no more than 5 units total for both courses over two quarters).
3. In the second year, pass at a satisfactory level:
 - a) additional graduate-level theory/evaluation courses in the department to make a total of six such courses with a grade of 'B+' or better over the first two years of the program.
 - b) CASA 394, Proposal Writing Seminar (offered Spring Quarter).
 - c) at least 40 units of completed course work overall for a total of at least 85 units of course work by the end of the second year.
4. At the beginning of Autumn Quarter in the second year, attend the teaching apprenticeship workshop.
5. Serve as a teaching assistant for one quarter in the second year.
6. By the first week of Winter Quarter in the second year, recruit two of four qualifying paper committee members for the first qualifying paper for topic or area.
7. By the end of the fourth week in Winter Quarter in the second year, declare and submit the title and preliminary bibliography for the first of two qualifying papers for topic or area. During Winter Quarter, enroll in CASA 397, Directed Individual Study, in preparation for the first qualifying paper due at the end of Spring Quarter in the Second year.
8. By the first day of finals week in Spring Quarter in the second year, submit the first of two qualifying papers for the topic or area. During Spring Quarter, enroll in CASA 391A, Qualifying Paper (Topic), or CASA 391B, Qualifying Paper (Area).
9. For those whose native language is English, pass, by the end of Spring Quarter of the second year, an examination in a language other than English in which there is a substantial body of general theoretical literature relevant to anthropology. For those whose native language is not English, demonstrate satisfactory command of English, as evidenced by successful completion of the first two years of graduate study. The examination may be taken through the Stanford Language Center, other Stanford language departments, or by appointment with the department's linguist.
10. During Spring Quarter, enroll in CASA 394, Proposal Writing Seminar.
11. Upon completion of the above requirements, and upon recommendation of the CASA faculty, petition the University for candidacy by the end of Spring Quarter of the second year.
12. Upon completion of the above requirements, and upon recommendation of the Cultural and Social Anthropology faculty, request the Master's Degree on the way to the Ph.D. degree program by the end of Spring Quarter of the second year.
13. In the third year, complete the following:
 - a) during the Autumn Quarter, submit three dissertation research grant proposals, with human subjects protocols.

b) by the first week in Autumn Quarter in the third year, recruit the remaining two of four qualifying paper committee members for the second qualifying paper for topic or area.

c) by the end of the fourth week of Autumn Quarter in the third year, declare and submit the title and preliminary bibliography for the second of two qualifying papers for topic or area. During Autumn Quarter, enroll in CASA 397, Directed Individual Study, in preparation for the second Qualifying Paper due at the end of Winter Quarter in the third year.

d) by November 15 in the third year, provide a statement to the Committee on Higher Degrees declaring the date planned for the oral examination and submit declaration of the oral examination committee to the student program coordinator.

e) by the last day of finals week in Winter Quarter in the third year, submit the second of two qualifying papers for topic or area. During Winter Quarter, enroll in CASA 391A, Qualifying Paper (Topic), or CASA 391B, Qualifying Paper (Area).

f) By the fourth week in Spring Quarter, schedule and pass the University oral examination in the form of a dissertation proposal defense. During this exam, file the dissertation reading committee form and confirm the committee's revisions to the dissertation proposal for fieldwork and dissertation research. Secure approval for the revised dissertation proposal before leaving for dissertation fieldwork.

14. In the fifth year, complete the following requirements:

a) during the fifth year and after returning from fieldwork, complete one or more teaching assistant quarters in the department. During the fifth year, attend minimum four out of five dissertation writers seminars, CASA 392, Dissertation Writers Seminar. Each quarter, chapter drafts of the dissertation should be handed in to the dissertation reading committee for review.

b) after submission of the penultimate draft of the dissertation and before the quarter preceding the quarter in which the dissertation will be submitted for Ph.D. degree, deliver an oral presentation of the dissertation in the department.

PH.D. MINOR

Prospective Ph.D. minors in Cultural and Social Anthropology should request an application from the student program coordinator. The requirements for a minor in Cultural and Social Anthropology consist of the following:

1. Complete 30 units of courses in the Department of Cultural and Social Anthropology (CASA) at Stanford with a grade point average (GPA) of 3.0 or better. Course work for a minor cannot also be used to meet requirements for a master's degree.
2. Enlist a faculty member within CASA at Stanford who will provide written consent to serve as the adviser for the minor and serve on the student's oral examination and dissertation committees (see the student program coordinator for a listing of faculty and office hours).
3. In conjunction with the program adviser, determine a coherent course of study related to the Ph.D. program, including CASA 301, History of Anthropological Theory, two additional CASA theory courses, and one CASA course in a geographical area. For a list of current theory courses, see the student program coordinator.
4. File the necessary paperwork with the student program coordinator. Please note that the department requirements, listed above, are more extensive than the University requirements.

FINANCIAL SUPPORT

The department endeavors to provide needed financial support (through fellowships, teaching and research assistantships, and tuition grants) to all students admitted to the Ph.D. program who maintain satisfactory degree progress. Applicants for the Ph.D. program must file a request for financial aid when applying to the program if they wish to be considered for support. First-year students in the Ph.D. program who have not entered with outside funding are required to make at least one extramural application for predissertation improvement funding by the end

of Autumn Quarter in the first year. Second-year students in the Ph.D. program are required to perform one teaching assistantship quarter. Third-year students in the Ph.D. program who have not secured outside funding are required to make at least three extramural applications for dissertation research funding by the end of Autumn Quarter of the third year. Fourth-year students must submit a department application for funding as a predoctoral research affiliate before leaving for fieldwork. Fifth-year students in the Ph.D. program may be required to perform one teaching assistantship quarter. Fifth-year students in the Ph.D. program who have not secured extramural funding for the sixth year and beyond are advised to make at least two dissertation write-up funding applications and secure extramural funding for dissertation write-up from the sixth year and beyond.

In order to be eligible for department funding of summer fieldwork and research, first- through fifth-year students must make at least one intramural or extramural summer funding application for each summer of research and fill-out and hand in the department's application establishing eligibility for the summer funding.

No financial support is available to students enrolled for the M.A. degree.

TEACHING CREDENTIALS

For information concerning the requirements for teaching credentials, consult the "School of Education" section of this bulletin or address the inquiry to the Credential Administrator, School of Education.

COURSES

Undergraduates register in courses numbered in the 100s or below. Graduate students register in courses numbered in the 200s or above.

WIM indicates that the course satisfies the writing in the major requirements.

UNDERGRADUATE

INTRODUCTION TO THE HUMANITIES (IHUM)

The following Introduction to the Humanities courses are taught by Cultural and Social Anthropology department faculty members. IHUM courses are typically available only to freshmen seeking to fulfill GER: I requirements; see the "Introduction to the Humanities" section of this bulletin for further information. Prospective majors in Cultural and Social Anthropology are advised to consider satisfying their GER: I b,c requirements by registering for the following IHUM courses.

IHUM 27A,B. Encounters and Identities—The formation of ideas about individual and collective identities in S. Africa, W. Europe, and the U.S. Contemporary ideas about identity, including national, racial, ethnic, and gender identity; historical encounters and social transformations linking these areas. Challenging popular assumptions about the origins of identities through similarities and differences among ideas of individual and collective identity in different regions of the world. GER:1b,1c (two quarter sequence)

IHUM 27A. 5 units, Win (*Ferguson*)

IHUM 27B. 5 units, Spr (*Yanagisako*)

INTRODUCTORY

Open to all students, these courses are introductory in the sense that prior knowledge is not assumed. Students who want a general introduction to human behavior and culture are advised to take CASA 1; those who are interested in introductory courses focused on specific areas of anthropological inquiry should choose from among the courses numbered 2 through 18.

CASA 1/201. Introduction to Cultural and Social Anthropology—Crosscultural anthropological perspectives on human behavior, including cultural transmission, social organization, sex and gender, culture change, technology, war, ritual, and related topics. Case studies illustrating the basic principles of the cultural process. Films. GER:3b,4a
5 units, Win (*Costanzo-Kapur*)

CASA 4. Language and Culture—Language in relation to inequality and power. Focus is on the roles of linguistic practices in constituting and reproducing social relationships, institutional arrangements, and political interests and identities. How language is implicated in differing contexts of domination and struggle including class, race, gender, and sexuality, using existing empirical studies of the language-power linkage. Student projects involve data collection, transcription, analysis, theoretical implications, and connections to existing literature. GER:3b
5 units (*Inoue*) not given 2004-05

CASA 5. Introduction to Linguistic Anthropology—The role of linguistic practice in constructing identities, social relationships, and institutions, and in reproducing ideologies and power relations. GER:3b
5 units (*Inoue*) not given 2004-05

CASA 8N. The Anthropology of Globalization—Stanford Introductory Seminar. Preference to freshmen. Anthropological approach to how cultural change, economic restructuring, and political mobilization are bound up together in the process of globalization. Is this a new world of planet-wide interconnections and prosperity and democracy, or a grim world of exploitative transnational corporations that exploit labor and markets to produce culturally homogeneous consumer goods? How new forms of social and political organization are restructuring a world that is culturally diverse, interconnected, and increasingly unequal. GER:3b
3-4 units, *Aut* (*Ferguson*)

CASA 14. Anthropology and Art—Modernity. How the concept of art appears timeless and commonsensical in the West, and with what social consequences. Historicizing the emergence of art. Modernist uses of primitive, child art, asylum, and outsider art. GER:3a
5 units, *Aut* (*Malkki*)

CASA 16. Native Americans in the 21st Century: Encounters, Identity, and Sovereignty in Contemporary America—What does it mean to be a Native American in the 21st century? Beyond traditional portrayals of military conquests, cultural collapse, and assimilation, the relationships between Native Americans and American society. Focus is on three themes leading to in-class moot court trials: colonial encounters and colonizing discourses; frontiers and boundaries; and sovereignty of self and nation. Topics include gender in native communities, American Indian law, readings by native authors, and Indians in film and popular culture. GER:3b,4b
5 units (*Wilcox*) not given 2004-05

CASA 17. Anthropological Approaches to Rights—What are rights? How did we come to believe that we have them? Is the idea of rights a Western cultural concept; can it be the foundation of a universal or global politics? The relation between rights and equality. GER:3b
5 units (*Ferguson*) not given 2004-05

THEORY AND RESEARCH (UNDERGRADUATE AND MASTER'S)

CASA 88. Theories in Race and Ethnicity—Concepts and theories of race and ethnicity in the social sciences and cultural studies. U.S. based definitions, ideas, and problems of race and ethnicity are compared to those that have emerged in other areas of the world. GER:3b
5 units, *Win* (*Yanagisako*)

CASA 90. Theory of Cultural and Social Anthropology—For CASA majors only. Anthropological interpretations of other societies contain assumptions about Western societies. How underlying assumptions and implicit categories have influenced the presentation of data in major anthropological monographs. Emphasis is on Marx, Durkheim, Weber, and anthropological analyses of non-Western societies. WIM
5 units, *Win* (*Hart*)

CASA 92. Undergraduate Research Proposal Writing Workshop—Practicum. Students develop independent research projects and write research proposals. How to formulate a research question; how to integrate theory and field site; and step-by-step proposal writing.
1-3 units, *Aut, Win* (*Costanzo-Kapur*)

CASA 93. Prefield Research Seminar—Preparation for anthropological field research in other societies and the U.S. Data collection techniques include participant observation, interviewing, surveys, sampling procedures, life histories, ethnohistory, and the use of documentary materials. Strategies of successful entry into the community, research ethics, interpersonal dynamics, and the reflexive aspects of fieldwork. Prerequisites: two CASA courses or consent of instructor.
5 units, *Spr* (*Yanagisako*)

CASA 93B. Prefield Research Seminar: Non-Majors—Preparation for anthropological field research in other societies and the U.S. Data collection techniques include participant observation, interviewing, surveys, sampling procedures, life histories, ethnohistory, and the use of documentary materials. Strategies for successful entry into the community, research ethics, interpersonal dynamics, and the reflexive aspects of fieldwork.
5 units (*Staff*) not given 2004-05

CASA 94. Postfield Research Seminar—Undergraduates analyze and write about material gathered during summer fieldwork, emphasizing writing and revising as steps in analysis and composition. Students critique classmates' work and revise their own writing in light of others' comments. Ethical issues in fieldwork and ethnographic writing, setting research write-up concerns within broader contexts. Goal is to produce an ethnographic report based on original field research.
5 units, *Aut* (*Freidenfelds*)

CASA 94B. Postfield Research Seminar: Non-Majors—Goal is to produce an ethnographic report based on original field research. Student critiques. Ethical issues in fieldwork and ethnographic writing. Research writing concerns within broader contexts.
5 units (*Staff*) not given 2004-05

CASA 95A. Research in Anthropology—Independent research conducted under faculty supervision, normally taken junior or senior year in pursuit of a senior paper or an honors project. May be taken more than one quarter for credit.
1-10 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 95B. Senior Paper—Taken in the final quarter before graduation. Independent study and work on senior paper for students admitted to the program. Prerequisite: consent of program adviser and instructor.
1-10 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 96. Directed Individual Study—For undergraduate students with special needs, and showing the capacity to do independent work. Prerequisite: consent of instructor.
1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 102. Archaeological Field Methods: Presidio San Francisco—For students who participated in the archaeological dig at the Presidio during the summer. GER:3b
5 units, *Aut* (*Voss*)

CASA 103/203. Laboratory Methods in Archaeology—What do archaeologists do with the things they dig up, and how can they use artifacts to learn about past cultures? Hands-on experience cataloging, analyzing, and interpreting an archaeological collection. Students are exposed to standard methods in cataloging and curation, and in analysis of different types of artifacts, animal bone, and botanical remains. Individual or group analysis projects with reports that communicate the research findings. GER:3b
5 units (*Voss*) not given 2004-05

CASA 108. History of Archaeological Thought—(Same as ARCHLGY 103.) Introduction to the history of archaeology and the forms that the discipline takes today, emphasizing developments and debates over the past five decades. Historical overview of culture, historical, processual and post-processual archaeology, and topics that illustrate the differences and similarities in these theoretical approaches.
5 units, *Win* (*Voss*)

CASA 137E/237E. Excavation at Catalhoyuk, Turkey—Archaeological field experience by participating in Stanford's excavation at Catalhoyuk in Summer. Focus is on the urban character of this earliest of towns. Course prepares student for the Summer dig.

3-5 units, Spr (Hodder)

CASA 155. Virtual Communities: Online Technologies and Ethnographic Practice—Theoretical and practical approaches to ethnographic projects involving online technologies. Focus is on virtual communities. The methodological implications of online ethnographic research: researcher roles, the notion of identities, human subject issues, distributed collaboration, and alternative representations. Conceptual implications such as interpreting online technologies as virtual environments for human interaction versus a cultural artifact, and the nature of the Internet as both setting and technology for ethnography. GER:3b

5 units, Aut (Engel)

CASA 190/290. History and Theory in Cultural and Social Anthropology—Goal is to place anthropology in historical and national contexts and treat theoretical and methodological issues that inform contemporary theory and practices. Readings include Marx, Weber, Durkheim, and anthropological analysis of non-Western societies. 190 is limited to undergraduate non-CASA majors; 290 is limited to CASA undergraduate majors and master's students. GER:3b

5 units, Win (Baviskar)

CASA 199/299. Senior and Master's Thesis Writing Workshop—For students writing a senior thesis. Techniques of interpreting data, organizing bibliographic materials, writing, editing and revising. Also preparation of papers for conferences and publications in anthropology. Undergraduate seniors register for 199; master's students register for 299.

2 units (Staff) not given 2004-05

GENERAL

AREA COURSES

CASA 71. Asian American Representation in Mass Media—How Asians are represented as a racial category in N. American mass media. The history of racialized representations of Asians in mainstream film and television; mass media as a means through which knowledge of and about Asia, Asians, and Asian Americans have been produced for American audiences. GER:3b

5 units, Spr (Joo)

CASA 72. Dance and Culture in Latin America—(Enroll in DANCE 168.)

4 units, Spr (Cashion)

CASA 74. South Asian Histories and Cultures through Popular Film: Bollywood and Beyond—Indian cinema has been a site for the articulation of ideas about nation, class, caste, gender and sexuality, community, and diaspora. Focus is on Bollywood films, and Indian cinema in general, as social, cultural, and political phenomena. How cinematic form, production and distribution networks, and audience reception mediate the emergence of postcolonial forms of identity and consciousness. Film screenings. GER:3b,4a

5 units (Mankekar) not given 2004-05

CASA 77/277. Japanese Society and Culture—Focus is on power, identity, and the politics of knowledge production. How transnational interactions influence Japanese identity. How anthropological knowledge has contributed to understanding Japanese culture and society. Gender, race and class; contemporary ethnographies. Modernity and globalization. Cultural politics, domestic work, labour management, city planning, ad images, anime, martial art, fashion, theater, leisure, and tourism. GER:3b,4a

5 units, Spr (Satsuka)

CASA 83. Gender in South Asian Communities at Home and Abroad—The relationship between men and women in S. Asian communities in India, Pakistan, Bangladesh, Sri Lanka, Nepal, and overseas communities. Focus is on the relationship between the practices and ideologies of gender, and other social institutions including religion,

family, state, mass media, and ideologies of communalism and nationalism. Prerequisite: 12 or consent of instructor.

3-5 units (Mankekar) not given 2004-05

CASA 111X. Introduction to Language Change—(Enroll in ANTH-SCI 110.)

4-5 units, Win (Fox)

CASA 116X. Language, Culture, and Education in Native North America—(Enroll in NATIVEAM 116, CSRE 116.)

5 units (Nelson-Barber) not given 2004-05

CASA 118A. Silicon Valley in Perspective: Culture and Ecology of New Industrialism—Silicon Valley as a site of global discussion of technology and society. The history of the S. San Francisco Bay Area. The development of high-tech regions elsewhere. Popular stories of Silicon Valley emphasizing technology, industrialism, and entrepreneurship, and a counter-history concerned with gender and racial divisions of labor, the gap between rich and poor, and environmental consequences. Theoretical frameworks that go beyond such binary perspectives of high-tech development. GER:3b

5 units, Aut (Lee)

CASA 124. Violence and the Politics of Memory in East Asia—How memories of critical events from the 20th century past, such as state violence, colonialism, terrorism, ethnic cleansing, and international armed conflicts, inform gender, class, and ethnic relations in China, Korea, and Japan. Sources include ethnographies, theory, and films. GER:3b

5 units, Spr (Mitsui)

CASA 125. South Asian Diasporas—The history of migration from S. Asian to the U.S., Canada, and the U.K., and the configuration of South Asian identities and politics. How migration is shaped by the countries of arrival and departure. How S. Asian immigrants negotiate citizenship, identity, and belonging while maintaining ties to their homelands. How they figure in the host country's politics of race and ethnicity. The impact of gender, sexuality, and class on the formation of identities? GER:3b

5 units, Spr (Ameeriar)

CASA 127. Tibetan Ritual Life—(Same as RELIGST 217A.) The human life cycle, the calendar year, and pilgrimage are used as organizing principles to examine Buddhist and lay rituals that mark important occasions, bless people and places, ward off danger, heal wounds, alleviate suffering, predict the future, affirm Tibetan identity, and inspire political activism. Also covered: material culture of rituals including butter sculpture, thangka painting, and costumes; performative aspects including monastic dance, chanting, instrumental music, song, and opera; and the meanings of rituals to those who participate in them. The role of ritual in human culture more generally. GER:3a,4a

5 units (Diehl) not given 2004-05

CASA 128. The Anthropology of Japan—(Same as ANTHSCI 24.) Cultural history of Japan since WWII. Transformation of religion, kinship, gender, education, work, leisure, ideology, and national identity as interconnected institutions. The legacy of Tokugawa and prewar Japan as antecedents to postwar developments. (HEF I, II) GER:3b

3-5 units, Win (Befu)

CASA 128B. Globalization and Japan—(Same as ANTHSCI 128B/228B.) Globalization theories in anthropology and sociology, and Japan in the context of these theories. Ethnographic cases of Japan's global presence from the 15th century to the present. Processes of globalization in business management, popular culture, and expatriate communities. Japan's multiculturalization through its domestic globalization. (HEF IV) GER:3b,4a

3-5 units (Befu) not given 2004-05

CASA 135/235. Native Peoples of the Americas: Prehistory, Contacts, and Contemporary Debates—Using archaeological, ethnographic, and historical sources, exploration of the distinctive features and cultural traditions of Indigenous societies in the Americas. Pre-Colum-

bian religion, arts, and the construction of power, social complexity, official history, and myth. Continuities and changes in those traditions resulting from Spanish conquest, colonial rule, and subsequent global changes in the 20th century. Rise of nationalism, indigenous movements, and the changing roles of anthropologists and archaeologists. GER:3b,4b
5 units (*Wilcox*) not given 2004-05

CASA 145A/245A. Poetics and Politics of Caribbean Women's Literature—Mid-20th century to the present. How historical, economic, and political conditions in Haiti, Cuba, Jamaica, Antigua, and Guadeloupe affected women. How Francophone, Anglophone, and Hispanophone women novelists, poets, and short story writers respond to similar issues and pose related questions. Caribbean literary identity within a multicultural and diasporic context, the place of the oral in the written feminine text, family and sexuality, translation of European master texts. History, memory, and myth, and responses to slave history, colonialism, neocolonialism, and globalization. GER:3b,4c
5 units, *Win* (*Duffey*)

CASA 171. Mythology, Folklore, and Oral Literature of Central Asia—Central Asian cults, myths, and beliefs from ancient time to modernity. Life crisis rites, magic ceremonies, songs, tales, narratives, taboos associated with childbirth, marriage, folk medicine, and calendrical transitions. The nature and the place of the shaman in the region. Sources include music from the fieldwork of the instructor and the Kyrgyz epoch Manas. The cultural universe of Central Asian peoples as a symbol of their modern outlook. GER:3b
5 units, *Aut* (*Kunanbaeva*)

CASA 183D/283D. Border Crossings and American Identities—How novelists, filmmakers, and poets perceive racial, ethnic, gender, sexual preference, and class borders in the context of a national discussion about the place of Americans in the world. How Anna Deavere Smith, Sherman Alexie, or Michael Moore consider redrawing such lines so that center and margin, or self and other, do not remain fixed and divided. How linguistic borderlines within multilingual literature by Caribbean, Arab, and Asian Americans function. Can Anzaldúa's conception of borderlands be constructed through the matrix of language, dreams, music, and cultural memories in these American narratives? Course includes examining one's own identity. GER:3a,4b
5 units, *Aut* (*Duffey*)

CASA 187/287. Contemporary China: Social Change, Ruptures of the Everyday—What happened to Maoism? Where have all these karaoke bars and cell phones come from? Cultural shifts in contemporary China in order to theorize connections and conflicts between macro and micro-level social transformations. In China today, how do macro-level processes of privatization, consumerism, and the restructuring of the party-state relate to changes in everyday experiences for diverse groups? Focus is on the changing experiences of inequality, body politics, family relations, identity, new media, and spatial mobility. GER:3b,4a
5 units (*Kohrman*) not given 2004-05

TOPIC COURSES

CASA 82/282. Medical Anthropology—Emphasis is on how health, illness, and healing are understood, experienced, and constructed in social, cultural, and historical contexts. Topics: biopower and body politics, gender and reproductive technologies, illness experiences, medical diversity, and social suffering and the interface between medicine and science. GER:3b,4a
5 units, *Win* (*Kohrman*)

CASA 82A. Race and Medicine—Race, identity, culture, biology, and political power in the history of medicine and healthcare in the U.S. The emergence of racial categories, critical race theory, biological theories of racial ordering and of race and sexuality, and the medicalization of race. Topics include: colonial history and medicine, the politics of racial ordering, the protection of human subjects and research ethics, current health disparities between racially identified populations in the U.S., and recent developments in human genetic variation research.
5 units (*Lee*) not given 2004-05

CASA 113X. Political Anthropology from Rousseau to Freud—A confrontation between ways of accounting for society in an individualistic framework: the social contract; political economy; individualistic sociology; society as crowd; mass psychology; and sociopolitical institutions. A typology of ways in which a given anthropology constrains conceptions of the social and political order. Writers include Rousseau, Hume, Smith, Constant, Tocqueville, Marx, Durkheim, Weber, and Freud.
3-5 units, *Spr* (*Dupuy*)

CASA 121. Global Feminisms—Feminist theorists and writers including Moraga, Anzaldúa, Morrison, Neale-Hurston, Silko, Hong Kingston, Yamamoto, Xinran, de Beauvoir, Cott, Pateman, and Fraser. GER:3b
5 units, *Win* (*Chertow*)

CASA 122. Anthropology of Development—From the genome to the Amazon rain forest, nature as the center of competing claims. How do cultural arrangements shape ideas and practices about nature? Social science perspectives on the environment. Focus is on environmental struggles in historical and geographical context and in relation to capitalism and colonialism, to examine the cultural politics of nature. GER:3b
5 units, *Spr* (*Baviskar*)

CASA 126. Mediating Desire: Gender, Race, and Representation—How glamour, drag, punk rock, beauty queens, and ghetto-fabulous style have served marginalized people to create possibilities for survival, identity, and desire. How marginality and mediated images of other lives are understood, performed, embraced, and rejected through representations. The process of mediation and the transformation of events into messages. Theories of communication, identity, and representation. GER:3b
5 units, *Spr* (*Ochoa*)

CASA 132. Science, Technology, and Gender—Why is engineering often seen as a masculine profession? What have women's experiences been in entering fields of science and technology? How has gender been defined by scientists? The struggles of women in science to negotiate misogyny and cultural expectations, reproductive issues, how the household became a site of consumerism and technology, and the cultural issues at stake as women join the ranks of scientists. GER:3b,4c
3-5 units (*Jain*) not given 2004-05

CASA 135X. Pilgrimage and Sacred Landscapes—(Same as RELIGST 235.) Perspectives include cultural, spiritual, psychological, medical, economic, and political. Christianity, Buddhism, Hinduism, Islam, Native American, and secular; sources include Europe, Tibet, India, Native America, and the Middle East. Why do pilgrims often make their journeys difficult and painful? How do landscapes become sacred? What happens when places such as Jerusalem are intersections for groups with different belief systems? Contemporary U.S. destinations such as Grace-land and the Vietnam Memorial; journeys of personal or non-parochial cultural significance. GER:3a
4 units, *Aut* (*Diehl*)

CASA 144/244. Sex, Blood, Kinship, and Nation—What do these terms have to do with each other, with belonging, with identity? Against a background of traditional anthropological theories about sex, procreation, and kinship, the transformations in the last 25 years, taking up notions of sex and gender, new reproductive technologies, adoption, and the use of blood to include and exclude certain people and groups. What is the significance of biology, culture, cosmology, and agency in the construction of these concepts and in the implications for practice in everyday life? GER:3b,4c
5 units (*Delaney*) not given 2004-05

CASA 147/247. Archaeology and the Public Imagination—The image of archaeology in the public imagination revolves around the romanticized exploits of an Indiana Jones or Lara Croft whose discoveries are depicted in mass media. Goal is to use archaeological tropes and stereotypes to explore the practices and investigations of explorers, travelers, colonizers, conquerors, collectors, looters, detectives, artists, scholars, and romantics. GER:3a
3-5 units, *Win* (*Carter*)

CASA 152. Archaeology: World Cultural Heritage—Focus is on issues dealing with rights to land and the past on a global scale including conflicts and ethnic purges in the Middle East, the Balkans, Afghanistan, India, Australia, and the Americas. How should world cultural heritage be managed? Who defines what past and which sites and monuments should be saved and protected? Are existing international agreements adequate? How can tourism be balanced against indigenous rights and the protection of the past? GER:3b

5 units, Aut (Hodder)

CASA 158X. Culture and Learning—(Same as EDUC 287.) Learning in institutional settings in the U.S. and around the globe. Learning in families, in schools, on the job, and on the streets. Emphasis is on the cultural organization of success and failure in American schools. Tentative consideration of opportunities for making less inequality.

3-4 units (McDermott) not given 2004-05

CASA 164. Ritual Musics of the World—(Same as MUSIC 164.) The roles that music plays in human ritual life: physical effects of music, shamanic healing, spirit possession, and rites of worship. Gender issues in ritual music. The power of music to create and affirm communities, and as a medium for spiritual knowledge. What can be known about people, places, and cultures through sound? How does music express and shape social identity? How are belief systems and patterns of social interaction manifested in musical practices? Sources include readings and guided listening to recorded music from cultural and religious traditions around the world. GER:3a,4a

4 units, Win (Diehl)

ADVANCED UNDERGRADUATE AND GRADUATE SEMINARS

AREA SEMINARS

CASA 117/217. Archaeology of the American Southwest: Contemporary Peoples, Contemporary Debates—Cultural diversity and archaeology from paleo-indians to the present. Focus is on cultural fluorences in areas such as the Mimbres Valley, Chaco Canyon, Mesa Verde, the Rio Grande, and the Hohokam in the Phoenix Basin. The development of agriculture, theories of social complexity and political economy, and the relationships between contemporary Native Americans, archaeologists, and the production of the past. GER:3b

5 units (Wilcox) not given 2004-05

CASA 118/218. Literature, Politics, and Gender in Africa—Intersections of gender, power, and desire; the politics of colonialism and Christianity; and nationalism and postcoloniality. Emphasis is on the politics of writing and critical imagination in historical and social context. Readings include novels and texts by African writers. GER:3b,4c

5 units (Malkki) not given 2004-05

CASA 119/219. The State in Africa—Postcolonial African states in historical and ethnographic context. Focus is on contemporary African states not as failures, but as the products of distinctive regional histories and political rationalities. GER:3b,4a

5 units (Ferguson) not given 2004-05

CASA 173/273. Nomads of Eurasia—The nomads of the Eurasian steppes, their lifestyles, and cultural history, including Mongolia, Kazakhstan, Kyrgyzstan, and Turkmenistan. Languages, traditional economics, art, the relationships between sedentary and nomadic peoples, and the early background and gradual Turkification and Islamization of Central Asia and Lamaization of S. Siberia. Regional trade networks (the Silk Road) where nomads were the mediators in innovations, the Mongol empire and its fate, Imperial Russian expansion, and the incorporation of inner Asia into the USSR. GER:3b

4-5 units, Spr (Kunanbaeva)

CASA 178/278. Archaeology of the Middle East—The roles of memory, archives, and deep time in the periods before writing in the Middle East and Europe. Prehistoric societies and relationships with their own pasts. How these societies constructed histories before writing. GER:3b

5 units (Hodder) not given 2004-05

CASA 179/279. Anthropology of the Middle East—The roles of memory, archives, and deep time in the periods before writing in the Middle East and Europe. Prehistoric societies and relationships with their own pasts. These societies constructed complex histories well in advance of writing. GER:3b,4a

5 units (Delaney) not given 2004-05

TOPIC SEMINARS

CASA 112/212. The Archaeology of Cities—Case study approach. The archaeological evidence of urban life from first cities formed nearly 8,000 years ago through the archaeological remains of urban life in the San Francisco Bay Area. Focus is on the material and spatial aspects of urban cultures. Field trips to Bay Area archaeological sites and collections. GER:3b

5 units (Voss) not given 2004-05

CASA 130A/230A. Bioethics and Anthropology—(Same as ANTHSCI 174/274.) The relevance of moral and ethical issues in health and illness, the development of scientific knowledge, and applications of biomedical technology from an anthropological perspective. The ways moral problems in science and technology are culturally situated, defined, and resolved in specific historical, political, social, and economic contexts. Research ethics for anthropologists studying health and illness. Focus is on cultural production of moral dilemmas in biomedicine and healing practices in diverse cultures. (HEF IV) GER:3b

5 units, Spr (Koenig)

CASA 131. Archaeology and Anthropology of Visual Culture—Archaeological and anthropological inquiry into visual images and aspects of cultures.

5 units (Staff) not given 2004-05

CASA 134/234. Archaeology of Architecture—How archaeologists have approached the interpretation of architectural remains. Emphasis is on the cultural and social aspects of spatial arrangements in the past and includes ethnographic, ethnoarchaeological, and archaeological case studies. Technical and analytical strategies are integral to the interpretive process. The ways in which archaeological data are identified, analyzed, and deployed in social interpretation of structured space. GER:3a

5 units (Voss) not given 2004-05

CASA 138. Feminist Practice in Archaeology—Graduate seminar. Focus is on theoretical standpoints and analytical strategies in archaeological studies of gender. The history of feminist thought in archaeology, including the relationship between archaeology and feminist inquiries in anthropology, history, and the natural sciences. Case studies that have played a key role in the development of feminist theory and practice in archaeology. The growing influence of third-wave feminist thought and queer theory.

5 units (Voss) not given 2004-05

CASA 140/240. An Archaeology of Death—Responses including fascination, anger, and contestation. Funerary data provides information on ancient populations and societies, and the identity and status of the deceased. Questions asked by archaeologists about bodies of evidence. Classic texts; what it means to bury, cremate, exhume, manipulate, commemorate, fear, and worship the dead. Readings from archaeology, anthropology, and sociology. GER:3b

3-5 units, Aut (Carter)

CASA 146/246. Masculinity: Technologies and Cultures of Gender—What is masculinity? How are masculinities invested with power and meaning in cultural contexts? How is anthropological attention to them informed by and extending inquiry across the academy in spheres such as culture studies, political theory, gender studies, history, and science and technology studies? Limited enrollment. GER:3b

5 units, Win (Kohrman)

CASA 151/251. Cultural Studies—Identity, community, and culture; their interactions and formation. GER:3b

5 units, Aut (Joo)

CASA 157/257. Fundamentalism and Modernity—Why is fundamentalism becoming more popular around the world? Is fundamentalism a reaction against or an integral aspect of modernity? GER:3b
3-5 units (*Delaney*) not given 2004-05

CASA 160/260. McCarthyism: History, Gender, and the Politics of Democracy—Lecture series by Marge Frantz, historian and activist. History and analysis of the McCarthy period. Enrollment limited to 15. Prerequisite: consent of instructor. GER:3b,4c
5 units (*Jain*) not given 2004-05

CASA 201X. Readings in Science, Technology, and Society—Focus is on anthropological approaches and contributions to the field.
5 units (*Jain*) not given 2004-05

GRADUATE SEMINARS

Courses in this section numbered 300 through 380, except 302, satisfy the department's evaluation course requirement.

CASA 239. Introduction to Cultural Studies of Science and Technology—Theories about science as a system of knowledge production. The nature of scientific inquiry and scientific communities; cultural and ideological aspects of scientific practices, institutions, and theories. Evolutionary theory including Darwin. The creation of development as an economic and social discipline. New relations of technology, society, and identity made possible by the Internet.
5 units, *Aut* (*Luthra*)

CASA 253. Anthropology and Tourism—The influence of anthropology and tourism upon each other. How similar practices deal with travel, culture, and knowledge of others. Cultural and ethnic tourism. The power of exotic places and peoples, and how travel shapes understanding them.
5 units, *Aut* (*Satsuka*)

CASA 300. Reading Theory Through Ethnography—Required of and restricted to first-year CASA Ph.D. students. Focus is on contemporary ethnography and related cultural and social theories generated by texts. Topics include agency, resistance, and identity formation, and discourse analysis.
5 units, *Win* (*Yanagisako*)

CASA 301. History of Anthropological Theory—Required of all CASA Ph.D. students. The history of cultural and social anthropology is studied in relation to historical and national contexts and to key theoretical and methodological issues as these continue to inform contemporary theory and practices of the discipline. Enrollment limited to 15. Prerequisite: consent of instructor.
5 units, *Aut* (*Ferguson*)

CASA 302. Anthropological Research Methods—Required of all CASA Ph.D. students; open to all graduate students. Research methods and modes of evidence building in ethnographic research. Enrollment limited to 10.
5 units, *Spr* (*Mankaker*)

CASA 313. Anthropology of Neoliberalism—How is the recent worldwide restructuring under the name neoliberalism understood as a social, cultural, and economic phenomenon? Focus is on interrogation of analytic categories, and ethnographic explorations of social and political processes.
5 units (*Ferguson*) not given 2004-05

CASA 319. Naturalizing Power: Kinship, Gender, Race, and Sexuality—The discursive and material practices through which social relations of inequality are naturalized. Ideologies of family, kinship, gender, and sexuality compared to the parallel processes of naturalization and mutual affirmation, and the role of anthropological theory in these naturalizations. Enrollment limited to 20. Prerequisite: consent of instructor if not a CASA graduate student.
5 units (*Yanagisako*) not given 2004-05

CASA 327. Language and Political Economy—Theories of language: Saussure, Jakobson, Hymes, Marx, Foucault, Butler, and Derrida. The theorization of language in its linkages to power, social relations, and history. Prerequisites: Linguistics or Anthropology course work.
5 units (*Inoue*) not given 2004-05

CASA 330. Multivocality and Archaeology—Archaeological legislation, NAGPRA, and the ethics of representation.
5 units (*Wilcox*) not given 2004-05

CASA 343. Culture as Commodity—Focus is on theories of commodification, interests in tourism, national cultures as marketable objects, and how identities are constituted through production and consumption. The formation of global style and taste.
5 units (*Ebron*) not given 2004-05

CASA 334B. The Modern Tradition II—(Same as MTL 334B.) Responses, refutations, elaborations, modifications to basic texts in critical theory such as Gramsci, Lacan, Derrida, and postcolonial, postmodern, and feminist theory. Prerequisite: 334A.
3-5 units, *Win* (*Mankekar*)

CASA 338. Anthropological Approaches to Religion
5 units, *Aut* (*Malkki*)

CASA 344. Ethical Criticism: Poststructuralism, Feminism, Psychoanalysis—Theories of the ethics of inquiry in the humanities and human sciences in the light of postmodernist challenges to traditional notions of value, subjectivity, and action. Topics include: ethics of ambiguity, situationism, and care; legality and morality; and authenticity, sincerity, truthfulness, and forgiveness. Contemporary preoccupations concerning heritage, relationship to the other, research ethics, and ethics codes. Readings: Giorgio Agamben, Zygmunt Bauman, Simone de Beauvoir, Jacques Derrida, Julia Kristeva, Melanie Klein, Emmanuel Lévinas, and Alison Wylie.
5 units, *Spr* (*Domanska*)

CASA 346A. Sexuality Studies in Anthropology—Current research on sexuality from perspectives including paleoanthropology, archaeology, ethnography, and linguistic anthropology. Readings on sexuality paired with case studies that explore theoretical and methodological issues.
5 units, *Spr* (*Mankekar, Voss*)

CASA 348. The Postcolonial City—Cities as modes of cultural experience. Relationships between urban spatiality and subject formation in postcolonial cities. Sources include ethnographic works on informality, globalization, and governmentality.
5 units, *Spr* (*Baviskar*)

CASA 349. Seminar on Studying Up—Issues in cultural theory and methodology through research on people who have greater material and cultural resources than those usually studied by anthropologists. How ideas about ideology, hegemony, identity, power, and practice are altered in studying those considered to be agents of power rather than the subaltern. Topics: global capitalism, masculinity, white racial subjectivity. Enrollment limited to 20.
4-5 units (*Yanagisako*) not given 2004-05

CASA 350. Nationalism and Gender—The co-implication of discourses of nationalism and gender, focusing on nationalist movements and ideologies in newly-independent countries and Third World contexts. Themes: discourses and practices of nationalism with institutions such as the state, mass media, and the family; masculinity, femininity, and militarization; and questions of representation, historiography, location, and strategy.
5 units (*Mankekar*) not given 2004-05

CASA 352. Foucault: The Question of Method—Foucault as methodological exemplar for historical and social research. Emphasis is on his historical studies of clinical medicine, prisons, and sexuality, and on applying his methods to empirical studies of topics such as colonialism, race, and liberal governmental rationality.
5 units, *Win* (*Ferguson*)

CASA 354. Narrative, History, and Memory—Interdisciplinary. The debates surrounding theories of narrative and their relevance to ideas of history and memory. Methodological implications and applicability to analysis of social research, particularly anthropology and history.

3-5 units (*Ebron*) not given 2004-05

CASA 357. Anthropology of Space and Architecture—Topics include: phenomenological versus political approaches to space; the interpretation of indigenous architectures; the body and its orientation in space; architecture as a semiotic system; the house, kinship, cosmology, and social organization; architectural modernism and postmodernism. Case studies oriented to student interest and may include: carceral space; colonial and postcolonial segregation; race and place; home and homelessness; and the gender of building. Readings include architects, historians, social theorists, philosophers, and ethnographers.

5 units, *Win* (*Hart*)

CASA 362. Topics in Political Economy—Emphasis is on Marxist approaches. Topics: the development and articulation of capitalism, imperialism, colonialism, dependency, and world systems; 20th-century capitalism, post-Fordism, and postmodernism; the political economy of race, gender, and ethnicity; class relations and productive inequalities in the Third World; the discourse of development; and the cultural mediation of political economic transformation. The ethnographic material that employs these theories is used to examine specific sociohistorical contexts.

5 units, *Win* (*Baviskar*)

CASA 370P. Advanced Pro Seminar: Topics in Archaeology

1-15 units (*Voss*) not given 2004-05

CASA 372. Materiality—The relationships between people and things. The world of objects plays a major role in materialism and the anthropology of material culture. Approaches that break down subject-object opposition. New social and psychological approaches that explore the mutual constitution of people and things, and object and subject. Approaches in which objects are seen to have agency, and people are seen as entangled in object worlds. Authors include Hegel, Marx, Benjamin, Miller, Gell, and Latour.

5 units (*Hodder*) not given 2004-05

CASA 373. Introduction to Archaeological Theory—The history of archaeological thought, concentrating on debates that have dominated the discipline in recent decades. Evolutionary theories, behavioral archaeology, processual and cognitive archaeology, and approaches termed feminist and post-processual archaeology in the context of wider debate in adjacent disciplines, focusing on the application and integration of theory in working through archaeological problems and issues.

5 units, *Win* (*Hodder*)

CASA 375. Archaeology and Globalism—The emergence of archaeology as a discipline in the context of the rise of the nation state. Global economies and other issues have created a new context for archaeology. How are archaeology and heritage responding? The idea of world heritage. The impact of postcolonialism. The commodification of the past: the past as theme park, as travel tourism or nostalgia, as exotic and other. Conflict between uses of the past for identity and as theme park; between heritage and resource or play. The impact of the Goddess, New Age, and other movements. Archaeology and human rights issues including forensic archaeology.

4-5 units, *Spr* (*Hodder*)

CASA 380. Practice and Performance: Bourdieu, Butler, and Giddens—Ethnography and archaeological, poststructuralist theories of iteration and mimesis are used by social scientists to negotiate the tension between social structure and social practice. Readings of three prominent theoretical frameworks in this area: Giddens's structuration theory, Bourdieu's practice theory, and Butler's theories of gender performativity. Ethnographic and archaeological case studies that employ methodologies inspired by these approaches. Intersections and contradictions among these theorists' work. Their use in anthropological practice. Emphasis is on gender, sexuality, and ethnicity.

5 units (*Voss*) not given 2004-05

CASA 391A,B. Qualifying Paper—Required of second- and third-year Ph.D. graduate students.

A. Topic, B. Area—2-5 units, *Aut, Win, Spr* (*Staff*)

CASA 392. Dissertation Writers Seminar—For graduate students in the process of writing dissertations and preparing for professional employment.

1-3 units, *Aut, Win, Spr* (*Malkki*)

CASA 393. Internship

1-15 units, *Aut, Win, Spr* (*Staff*)

CASA 394. Proposal Writing Seminar—Required of Ph.D. students in anthropology in their second year. The conceptualization of dissertation research problems, the theories behind them, and the methods for exploring them. Participants draft a research prospectus suitable for dissertation proposals and research grant applications. Limited enrollment. Prerequisite: 212 or consent of instructor.

5 units, *Spr* (*Voss*)

CASA 395A,B. First-Year Paper—Required of first-year students.

2-5 units, **A:** *Win*, **B:** *Spr* (*Malkki*)

CASA 396. Research Apprenticeship—Supervised work with an individual faculty member on a research project. May be taken for more than one quarter.

1-15 units, *Aut, Win, Spr* (*Staff*)

CASA 397. Directed Individual Study—For CASA Ph.D. students, supporting the qualifying paper and pre-dissertation field research.

1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 397A. Directed Individual Tutorial—For CASA Ph.D. students working directly with a faculty member on specialized course work supporting area of interest.

1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 397B. Dissertation Fieldwork—For CASA Ph.D. students conducting 4th-year dissertation field research.

1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 398. Teaching Apprenticeship—Supervised experience as and assistant in one undergraduate course.

1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 399. Master's Research Thesis—Research in connection with the master's paper.

1-15 units, *Aut, Win, Spr, Sum* (*Staff*)

CASA 444. Cultural and Social Anthropology Colloquium—Required of first-year CASA Ph.D. students.

1 unit, *Aut, Win, Spr, Sum* (*Staff*)

CASA 445. Cultural and Social Anthropological Symposium—Current topics and trends in cultural and social anthropology, cultural archaeology, and archaeology.

1 unit, *Aut, Win, Spr* (*Staff*)

OVERSEAS STUDIES

Courses approved for the Cultural and Social Anthropology major and taught overseas can be found in the "Overseas Studies" section of this bulletin, or in the Overseas Studies office, 126 Sweet Hall.