

# PSYCHOLOGY

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*Courtesy Professors:* James Greeno, Richard J. Shavelson

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The courses and research opportunities in the Department of Psychology introduce students to the vast corpus of data on, and explanations of, human nature and human behavior. Through the study of abnormal behavior, aging, child development, cognitive processes, decision-making, emotion, group behavior, infancy, language, learning and memory, personality, social perception, visual perception, and other related topics, students are introduced to the properties of sensory, cognitive, and affective systems, and of their interrelationships; to the reciprocal effects of one person on another; and to the effects on behavior of the physical, social, and cultural environment. The research programs of the faculty and students focus on the study of basic psychological mechanisms and, where appropriate, on relating basic research to the analyses and solutions of important societal problems.

The department, housed in Jordan Hall, maintains shop facilities and many computer-equipped laboratories. Bing Nursery School, located on campus at 850 Escondido Road, provides a laboratory for child observation, training in nursery school teaching, and research. It was constructed with funding from the National Science Foundation and a special grant from Mrs. Anna Bing Arnold and Dr. Peter Bing.

The department provides (1) courses designed for the general student, (2) a major program leading to the degree of Bachelor of Arts, including options for honors and a specialization in one of four content area tracks, (3) a minor program, (4) a coterminal master's degree program leading to the degree of Master of Arts, and (5) programs of graduate study and research leading to the degree of Doctor of Philosophy. Applications are not accepted for the master's degree except as noted below.

## UNDERGRADUATE PROGRAMS

### BACHELOR OF ARTS

*Major Requirements*—All students declaring a major in Psychology must complete a minimum of 55 units of course work in psychology. All courses taken to satisfy the 55-unit requirement must be taken for a grade of 'C-' or better (including the grades of 'S' and 'CR'). All majors complete Psychology 1, Introduction to Psychology, and one course in statistics. Beyond these two required courses, students must complete at least five of the following nine core Psychology courses:

20. Introduction to Brain and Behavior

30. Introduction to Perception

40. Introduction to Cognitive Psychology

50. Introduction to Human Neuropsychology

60. Introduction to Developmental Psychology

70. Introduction to Social Psychology

80. Introduction to Personality Psychology

90. Introduction to Abnormal Psychology

153. Introduction to Clinical Psychology

Students must take one writing intensive course (designated WIM) in psychology, and should check the *Stanford Bulletin* yearly as these courses may change.

Students may count up to 10 units of independent study and practica through Psychology 194 and 195, which are graded on a mandatory satisfactory/no credit basis. Students enrolled in the senior Honors program may take up to 15 units in independent study and practica, including Psychology 197 and 198.

Transfer students must take at least 28 units of course work in the department in order to receive the department's recommendation for graduation. Such students may receive transfer units for courses completed in psychology at any accredited university or college provided that the courses were taught by a regular faculty member and were approved by the Transfer Credit Office. All students must satisfy the five-core course requirement through courses completed at Stanford.

*Beyond the Minimal Requirement*—Many students want a "stronger" program than the minimal requirements listed above. This may be achieved in any or all of these ways:

1. Within the general major, the student may take advanced undergraduate or graduate courses. The student may also take advantage of widespread opportunities for directed research, working closely with individual faculty and graduate students.
2. The student may apply to the senior honors program, described below.
3. The student may elect to pursue one of four specialization tracks: Cognitive Sciences; Health and Development; Mind, Culture, and Society; or Neurosciences.
4. The department strongly recommends that all majors take at least one seminar.

The training obtained from the pursuit of any of these options is valuable not only for students considering graduate work in psychology, but also for those thinking of professional careers outside of psychology.

*Note*—Students who declared the psychology major before Autumn Quarter 1996-97 have the option of completing their major requirements as described in the *Stanford Bulletin* 1995-96.

### MINORS

*Declaration*—Students who wish to declare a minor field of concentration in Psychology must do so no later than the deadline for their application to graduate.

*Requirements*—Completion of a minimum of seven courses in psychology is required for the minor. Beyond Psychology 1 and 10, the minor must include three of nine core courses (20, 30, 40, 50, 60, 70, 80, 90, and 153) and at least two other courses within the department. All courses to be counted toward the minor must be passed with a grade of 'C-' or better.

### SPECIALIZATION TRACKS

Students in the major program, including those in the honors program, may elect to specialize in one of four tracks, namely, Cognitive Sciences; Health and Development; Mind, Culture, and Society; and Neurosciences. Students must meet the general requirements for the major (Psychology 1, 10, and the five core courses) plus the requirements designated for the specialization track. Typically the courses required for the track include one or two required courses and four to six recommended courses in psychology, one or two advanced seminars, along with three to four courses in related disciplines. (Psychology courses completed for the track count toward satisfying the major requirements.) In the ideal case, the student who specializes would acquire an understanding of a range of psychological processes, as well as an appreciation of the sig-

nificance of these processes in the chosen area of application. In this way, specialization could facilitate the student's preparation for a professional career in, for example, medicine, business, or counseling, or for graduate work in psychology and a more academic career. Information about the required and recommended courses for each track is available from the undergraduate coordinator.

## HONORS PROGRAM

The senior honors program is designed for exceptionally able students who wish to pursue a year of intensive supervised independent research. Admission to the program is made at the end of the student's junior year on the basis of (1) excellent academic performance, (2) previous research experience, and (3) recommendations by faculty and/or graduate students. An information meeting about the program is held in Winter Quarter.

Students interested in the program should involve themselves in research as early as possible and acquire a broad general background in psychology and a deep background in their chosen area. The program is particularly appropriate for students planning to go to graduate school in psychology and in other social sciences, as well as computer science, business, law, and medicine.

During Autumn and Spring Quarters of the senior year, students participate in a weekly seminar. In the autumn, the seminar is concerned with general methods and issues in psychological research. At the same time, students plan for research under the supervision of a prearranged faculty member, and proposals are presented orally at the seminar for discussion. A written copy of the proposal is turned in at the end of Autumn Quarter. During Winter and Spring quarters, students are primarily involved in completing research, presenting it to the seminar, and writing the honors thesis. Students present completed projects at a colloquium at the end of Spring Quarter, attended by students, faculty, and visitors.

## GRADUATE PROGRAMS

### MASTER OF ARTS

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

The Department of Psychology normally offers a Master of Arts degree only to students concurrently enrolled in its Ph.D. program or students concurrently pursuing A.B. or A.M. degrees. All applicants must satisfy University residency requirements for the degree and are responsible for consulting with their primary departments or the Financial Aid Office about the effects of the proposed program on their current funding.

Stanford undergraduate students who would like advanced training in psychology may apply for a coterminal A.M. degree in psychology. To do so, students should consult with the Student Services Officer in the department. Along with a coterminal program application, applicants must submit (1) a statement of purpose, (2) a preliminary program plan specifying the courses in which they intend to enroll to fulfill degree requirements, (3) at least two letters of recommendation from Stanford faculty members familiar with their academic work, (4) a current Stanford undergraduate transcript, and (5) a written agreement by a member of the Psychology faculty to serve as the student's master's degree adviser. This program is limited in size and admissions are selective. Students should apply to this program between their eighth and eleventh quarters of undergraduate study. The department's deadline for the submission of an application to the coterminal program is March 20.

In exceptional cases, students concurrently enrolled in another doctoral or professional program at Stanford may also apply for the A.M. degree. Such applicants should also consult with the department's Student Services Officer, and need to submit (1) a written agreement by a member of the Psychology faculty to serve as the student's adviser, (2) a statement of purpose, (3) a preliminary program plan specifying the courses in which they intend to enroll to fulfill degree requirements, (4) at least two letters of recommendation from Stanford faculty members familiar with their academic work, (5) complete undergraduate transcript(s), (6) a current Stanford transcript, and (7) GRE (or professional school test) scores.

Students must complete at least 36 units of psychology courses for the degree. (For coterminal degree students, course work for the master's degree may not duplicate courses taken for the undergraduate degree.) Of these 36 units, at least 18 must be in psychology courses numbered 200 or above. Units from Psychology 275 (Graduate Research) may not be counted toward these 18 units; service as a teaching assistant, through registration in 281 (Practicum in Teaching), may be counted for up to 3 of these 18 units. Two of the graduate courses must be selected from the courses listed as "core course" requirements. In addition, at least one statistics course beyond the introductory level is required. The course must be approved by the student's adviser. All courses to be counted toward the master's degree must be passed with a grade of 'B-' or better (unless the course is offered only on a satisfactory/no credit basis). Demonstration of competence in the design and execution of psychological research is also required for receipt of the master's degree. Normally, this demonstration entails completion of a master's thesis. However, evidence of other research experience (notably the completion of a senior honors thesis) may be substituted for a formal master's thesis upon approval of the department's Committee on Graduate Studies. Participation in graduate research is required for the master's degree. Students enrolled in the coterminal program must meet the University's residency requirement.

## DOCTOR OF PHILOSOPHY

There are no specific course requirements for admission to the doctoral program. However, an applicant should have research experience as an undergraduate, as well as the equivalent of an undergraduate major in psychology. The major focus of the doctoral program is on research training, and admission is highly selective.

Applicants for admission must submit their scores on the Graduate Record Examination (both general and psychology subject tests) as part of the application. This examination may be taken at most universities and colleges.

University requirements for the Ph.D. are described in the "Graduate Degrees" section of this bulletin.

In addition to fulfilling the residence requirement for the degree, the following requirements are stipulated.

*First-Year Course Requirements*—During the first year of graduate study, the student must take 207 (Proseminar for First-Year Ph.D. Graduate Students), at least one approved graduate statistics course, and at least two core courses from the list below. (Social Ph.D. graduate students must take 212, 215, and 259.)

- 202. Neuroscience
- 205. Foundations of Cognition
- 211. Developmental Psychology
- 212. Social Psychology
- or 215. Mind, Culture, and Society
- or 259. Emotions: History, Theories, Research
- 213. Personality

The student is expected to spend at least half of the time in research from the beginning of the first year of graduate study to the completion of the Ph.D., normally taking no more than 9 units of course work each quarter. At the end of the first year of graduate study, the student must file with the department a written report of the first-year research activities.

*Second-Year Course Requirements*—During the second year of graduate study (or as additional courses during the first year), the student must complete the core courses listed above and take a second approved graduate course in statistics.

*Third-Year Major Area Paper*—During the first week of Autumn Quarter of the fourth year, the student must turn in a Conceptual Analysis of the Dissertation Area (CADA). This paper provides a general framework for the research topic of the dissertation, addresses the central issues within the specialty area, and reviews the pertinent literature. Typically, the analysis has the kind of scope found in the opening chapters of the more traditional dissertations, but the exact format and scope of the paper is a joint decision made by student and adviser.

Prior to Autumn Quarter, the student should select two faculty members to read the paper and give feedback and commentary on it. These should be two faculty members most likely to serve on the later orals committee of the dissertation. A portion of the paper, revised as appropriate, can then become the first section of the actual dissertation proposal.

If the student should radically change the area of the dissertation research after the CADA has been written, the formal CADA procedure does not need to be repeated for the second dissertation topic. The student is still expected to be knowledgeable about the literature and problems of any research topics being pursued for the dissertation.

**Minor Requirements**—The candidate must complete either a University minor satisfactory to the minor department, or elect to have the minor waived by selecting 12 approved units outside the department. A student designing a program of 12 units outside the Department of Psychology is expected to do so in consultation with the adviser.

**Dissertation Reading Committee**—The candidate must select a dissertation reading committee satisfactory to the department. The minimum membership of this committee must be (1) the principal dissertation adviser, (2) a second member from within the department, and (3) a third member chosen from Psychology or another department.

**Orals**—The candidate must pass the University oral examination, which is based on the dissertation proposal, not on the completed dissertation. The reason for this policy is to permit the oral examination to serve the function of guiding and improving the proposed research. This function can best be served if the oral examination is scheduled early in the year in which the dissertation research is conducted. It is therefore expected that the oral examination will be taken by the end of the Autumn Quarter of the fourth year.

**Dissertation Requirements**—The candidate must complete a dissertation satisfactory to the dissertation reading committee.

Ph.D. candidacy expires five years after admission to candidacy by the University Committee on Graduate Studies. Reapplication requires department reexamination.

## STUDENT EVALUATIONS

**First-Year Evaluation**—It is the department's policy to evaluate the progress of each graduate student at the end of the first year of graduate study. As part of the procedure, each student is required to file with the department a report of the first-year research activities.

Students should discuss this report and the evaluation procedures with their adviser as early as possible in their first year. The report is due on June 1. If the student fulfills the academic promise displayed upon entrance, he or she is invited to continue to the doctorate.

The first-year evaluation is primarily based on three factors:

1. Quality of research carried out in the first year
2. Performance in courses (especially required courses)
3. Recommendations of the adviser (including a commitment on the part of that adviser to continue in that role)

**Second-Year Evaluation**—A similar evaluation is conducted at the end of the second year of graduate training involving the same criteria as the first year; however, the student is not required to submit a paper. Students who do not make satisfactory progress during the second year may be dropped from the program.

## THE DOCTORAL TRAINING PROGRAM

As indicated by the requirements described above, a student may concentrate in any one of several areas within psychology. Regardless of area, however, the training program places emphasis on the development of research competence, and students are encouraged to develop those skills and attitudes that are appropriate to a career of continuing research productivity.

Two kinds of experience are necessary for this purpose. One is the learning of substantial amounts of technical information. A number of courses and seminars are provided to assist in this learning, and a student is expected to work out a program, with his or her adviser, to attain this knowledge in the most stimulating and economical fashion.

A second aspect of training is one that cannot be gained from the courses or seminars. This is firsthand knowledge of, and practical experience with, the methods of psychological investigation and study. These methods include ways of behaving with the people or animals being studied. Students are provided with whatever opportunities they need to reach those levels of competence representative of doctoral standing. Continuing research programs, sponsored by members of the faculty, offer direct opportunities for experience in fields represented by the faculty's many research interests.

Each student achieves competence in unique ways and at different rates. Each student and adviser share in planning a program leading to the objectives discussed. The student is expected to spend half of his or her time on research and normally takes no more than 9 units of course work per quarter.

## TEACHING REQUIREMENT

The department views experience in supervised teaching as an integral part of its graduate program. Regardless of the source of financial support, all students serve as teaching assistants for four Psychology courses during their graduate study. Of the four courses, one of them should be Psychology 1, General Psychology, and another should be Psychology 10, Statistical Methods. Students are discouraged from participating in teaching during the first year of graduate study. Students typically progress from closely supervised teaching to more independent work. They usually begin by teaching sections of General Psychology and Statistics and then progress to more advanced courses in their area of specialization. They may offer a supervised, but essentially independent, seminar during their final year of graduate study.

## Ph.D. MINOR

Candidates for the Ph.D. degree in other departments may elect a minor in psychology. To obtain a minor, the student must complete 20 units of course work at the graduate level in the Department of Psychology, excluding Psychology 275 (graduate-level research). Cross-listed graduate courses can be used to satisfy this requirement. All courses counting toward the Ph.D. minor must be passed with a grade of 'B-' or better (unless the course is offered only on a satisfactory/no credit basis).

## COGNITIVE SCIENCE PROGRAM

Psychology is participating, along with the departments of Computer Science, Linguistics, Philosophy, and the School of Education, in an interdisciplinary program of cognitive science. The program is intended to provide students with an interdisciplinary education as well as a deeper concentration in psychology. Doctoral students in psychology are eligible to participate in the Cognitive Science program. Students who complete the requirements receive a special designation in cognitive science along with the Ph.D. in Psychology. To receive this field designation, students must complete 30 units of approved courses, 18 of which must be taken in two disciplines outside of psychology. For information or course approval, see the program adviser, Professor Tenenbaum.

## PSYCHOLOGY COLLOQUIUM

The Psychology Colloquium meets on most Wednesday afternoons at 3:45. Speakers from Stanford and other institutions present topics of current interest. Graduate students are expected to attend.

## COURSES

(WIM) indicates that the course meets the Writing in the Major requirement.

## SUMMER SESSION

The courses announced for the Summer Session are those regularly scheduled in the department curriculum. Additional courses may be announced in the Stanford University bulletin *Summer Session 2001*, issued in January.

## STANFORD INTRODUCTORY SEMINARS

**3N. Stanford Introductory Seminar: Culture and Mind**—Preference to freshmen. Explore the ideas that cultures and mind make each other up, including the role of culture in cognition, emotion, and motivation.

*3 units (Markus) not given 2000-01*

**4N. Stanford Introductory Seminar: Affect and Cognition**—Preference to freshmen. The psychological processes of emotions as they influence behavior, emphasizing the relation of emotions to other psychological concepts such as cognition and motivation. Conscious and nonconscious emotional influences. Three units for paper and final exam; 2 units for final exam only.

*2-3 units (Zajonc) not given 2000-01*

**5N. Stanford Introductory Seminar: The Psychology of Shyness**—Preference to freshmen. The causes, correlates, consequences, and treatments for shyness. Analysis focuses on temperament, situational, and cultural factors.

*3 units (Zimbardo) not given 2000-01*

**6N. Stanford Introductory Seminar: Remembering and Misremembering**—Preference to freshmen. Discussion of experiments and cases of errors, biases, distortions, and omissions in memory, and understanding them in light of a theory of memory.

*3 units, Win (Tversky)*

**8N. Stanford Introductory Seminar: Evaluating Popular Media Accounts of Social Science Findings**—Preference to freshmen. Introduction to the concepts and concerns of social psychology through pop media and user-friendly "trade books," e.g., Frank Sulloway's *Born to Rebel* which deals with the impact of birth order, and Dick Nisbett's *Culture of Honor* which deals with the reasons for high homicide rates in the American south. Critical considerations of articles, books, and documentary film are intended for lay people that deal with findings relevant to social psychology and related fields. Documentary films and magazine articles deal with the impact of parents on delinquency and achievement, and with various social problems and policy issues, e.g., affirmative action and crime. Limited enrollment.

*3 units (Ross) not given 2000-01*

**9N. Stanford Introductory Seminar: The Social Psychology of Race, Gender, and Culture**—Preference to freshmen. Focus is on the role that one's social context (one's position in society and social identity) plays in shaping the psychology of the individual and the collective psychology of society more generally.

*3 units (Steele) not given 2000-01*

**11N. Stanford Introductory Seminar: Origin of Mental Life**—Preference to freshmen. Mental life begins in infancy, so understanding the human mind requires discovering how thinking originates. How do babies construe the objects, events, people, and language that surround them? Recent advances in psychological theory and methods permit answers to questions once thought intractable. The methods, hypotheses, and evidence about how the human mind develops in infancy. Student summaries and critiques of studies that have been the most influential in the field of infant cognition.

*3 units, Spr (Markman)*

**12Q. Stanford Introductory Dialogue: Emotion**—Preference to sophomores. What is emotion? Why do we have emotions? Can we change our emotions? How do different people's emotions differ? Can emotions make us sick? Focus is on experimentally tractable questions, and empirical research findings relevant to these questions, emphasizing critical thinking and writing skills. Limited enrollment.

*2 units, Aut (Gross)*

**15Q. Stanford Introductory Seminar: Mind—A Historical View**—Preference to sophomores. How three disciplines, philosophy, physiol-

ogy, and mainly psychology, understand consciousness. Short lecture, followed by discussion.

*3 units, Aut (Hastorf)*

**19Q. Stanford Introductory Seminar: Studies of Animal Behavior**—(Enroll in Human Biology 91Q.)

*3 units, Aut (R. Fernald)*

## OPEN TO ALL STUDENTS

Additional courses not listed here are frequently offered by selected postdoctoral or terminal Ph.D. personnel in the areas of their special research. These are listed in the quarterly *Time Schedule*; the course descriptions are circulated in advance.

**1. Introduction to Psychology**—The scientific study of behavior, focusing on psychological research and theory. Topics: the biological bases of behavior, sensation and perception, emotion, learning, memory, cognition, child development, psychopathology, and social psychology. (Sections optional) GER:3b (DR:9)

*4-5 units, Aut (Gross)*

*Win (Zimbardo)*

*Spr (Staff)*

**3. Practicum in Effective Teaching Methods and Style**—Enrollment limited to advanced undergraduates serving as teaching assistants in Psychology 1. Discussions on teaching methods and style, selected readings on teaching effectiveness, student presentations to class sections, preparation of exams, and grading essays and term papers.

*3 units, Win (Zimbardo)*

**10. Introduction to Statistical Methods**—(Same as Statistics 60.) Emphasis is on techniques for organizing data, computing, and interpreting measures of central tendency, variability, and association. Estimation, confidence intervals, tests of hypotheses, t-tests, correlation, and regression. Possible topics: analysis of variance and chi-square tests, computer statistical packages. GER:2c (DR:4)

*5 units, Aut (Holmes)*

*Win (Staff)*

*Spr (Walther)*

**20. Introduction to Brain and Behavior**—How the brain regulates behavior and in turn is influenced by behavioral interactions. Behavior is described in physiological terms, organized with respect to evolutionary principles. Topics: neurons, transmission of neural information, anatomy and physiology of sensory and motor systems, regulation of body states and the biology of learning, memory, and psychopathology. Recommended: 1. GER:2a (DR:5)

*3 units, Aut (R. Fernald)*

**30. Introduction to Perception**—Perceptual psychology and sensory neuroscience, emphasizing vision and hearing. Topics: anatomy and physiology of the eye and ear, and of the visual and auditory areas of the brain, pitch and loudness perception, speech perception, color vision, depth perception, visual motion perception, etc. Recommended: 1. GER:3b (DR:9)

*3 units, Aut (Heeger)*

**40. Introduction to Cognitive Psychology**—Survey and analysis of major topics in cognitive psychology, including perception, memory, problem solving, and reasoning. Emphasis is on contemporary research and theory. Recommended: 1 and 10. GER:3b (DR:9)

*4 units, Win (Spieler)*

**50. Introduction to Human Neuropsychology**—Topics in human neuropsychology. Review of the functional organization of the human nervous system and of brain imaging techniques (MRI, PET, etc.). Hemispheric specialization and the brain basis of perception, memory, language, emotion, spatial cognition, and problem solving. Neuropsychological deficits in neurological disorders and their implications in

understanding normal function. Recommended: 1. (WIM)  
4 units, Win (Gabrieli)

**60. Introduction to Developmental Psychology**—Psychological development from birth to adulthood, emphasizing infancy and the early and middle childhood years. The nature of change during childhood and theories of development. Recommended: 1. GER:3b (DR:9) (WIM)  
3 units, Aut (Flavell)

**60A. Introduction to Developmental Psychology Section**—Guided observation of children age 2-6 at Bing Nursery School. Corequisite: 60.  
2 units, Aut (Hartman)

**70. Introduction to Social Psychology**—Surveys, theory, and empirical research on social psychological topics: attitudes and persuasion, identity, person perception, compliance, obedience, aggression, interpersonal and intergroup relationships, social conflict, prejudice, stereotyping, roles, attribution, and social judgment. Two lectures plus section each week. Original research proposal. Recommended: 1. GER:3b (DR:9) (WIM)  
4 units, Spr (Ross, Steele)

**80. Introduction to Personality Psychology**—A broad, balanced introduction to the study of personality. Key concepts and research methods, major theoretical approaches, and related empirical findings. Includes psychodynamic, trait, biological, humanistic, behavioral, social-learning, cognitive, and cultural perspectives. Recommended: 1.  
3 units, Win (Tsai)

**90. Introduction to Abnormal Psychology**—The nature, origin, and treatment of a variety of psychological disturbances, examined from psychodynamic, behavioral, cognitive, and biomedical perspectives. Historical and current controversies in the field. Recommended: 1. GER:3b (DR:9)  
3 units (Staff)

**102. Statistical Methods for Behavioral and Social Sciences**—See 252.

**103. Statistical Theory, Models, and Methodology**—See 253.

**110. Research Methods and Experimental Design**—Experimental research methods and principles in psychology. Structured research exercises and the design of an individual research project. Prerequisite: consent of instructor. (WIM)  
5 units, Spr (M. Lepper)

**112. Research Methods in Cognitive Psychology**—Focus is on conceptual and methodological issues that arise in research in the areas of cognitive science and cognitive neuroscience. Training in the logic and techniques of research provides students with the skills necessary for research in cognitive science. Students conduct several experiments, analyze their data, and interpret the results.  
5 units, Aut (Spieler)

**120. Cellular Neuroscience: Cell Signaling and Behavior**—Survey of neural interactions underlying behavior. Prerequisites: 1 or equivalent, and elementary biology.  
4 units, Aut (Wine)

**121. Ion Transport and Intracellular Messengers**—(Graduate students register for 228.) Ion channels, carriers, ion pumps, and their regulation by intracellular messengers in a variety of cell types. Lab demonstrations and brief hands-on introduction to some techniques (e.g., patch clamping). Recommended: 120 or introductory course in biology or human biology.  
3 units, Spr (Wine)

**122. Human Behavioral Biology**—(Enroll in Biological Sciences 150.)  
6 units (Sapolsky) alternate years, given 2001-02

**123. Graduate Seminar in Cognitive Neuroscience**—See 222. Prerequisite: consent of instructor  
1-3 units, Aut, Spr (Gabrieli)  
Win (Staff)

**124. Seminar on Psychophysiology**—See 236. Prerequisite: consent of instructor.  
4 units, Win (Gross)

**126. Sleep and Dreams**—(Enroll in Human Biology 11.)  
3 units, Win (Dement)

**131. Language and Thought**—The psychology of language, including production and understanding in utterances; from speech sounds to speaker's meaning; children's acquisition of the first language; and the psychological basis for language systems. Language functions in natural contexts and their relation to the processes by which language is produced, understood, and acquired. Prerequisite: 1 or Linguistics 1. GER:3b (DR:9)  
4 units, Aut (Clark)

**132. Language Processing**—Influential theories, computational models, major issues, and research in psycholinguistics. Emphasis is on sentence- and word-level processes in human language comprehension and production. Prerequisite: 40.  
4 units, Win (Griffin)

**134. Seminar on Language and Deception**—Deceptive, exploitative, and other noncooperative uses of language. How is language used to deceive or exploit? Where are these techniques practiced and why? What are the personal, ethical, and social consequences of these practices? Prerequisite: 131, Linguistics 1, or Philosophy 181.  
3 units, Win (H. Clark)

**136. Cognition and Aging**—(Graduate students register for 225.) Survey of research examining the influence of aging on cognition. Topics: the influence of aging on attention, language, memory, and the cognitive effects of age-related neurological disorders such as Alzheimer's and Parkinson's disease. Prerequisite: 40.  
3 units, Spr (Spieler)

**141. Cognitive Development**—Topics and issues on cognitive development, developmental changes in memory, conceptual organization, logical reasoning, and communication skills. Prerequisite: 1. GER:3b (DR:9)  
3 units, Spr (Johnson)

**142. Social Development**—Socialization and the development of social behaviors. Review of research concerning conscience and conduct, altruism and aggression, cooperation and competition, achievement motivation, and self-control.  
3 units (M. Lepper) not given 2000-01

**144. Conceptual Organization and Development**—See 242. Prerequisite: 141 or consent of instructor.  
1-3 units (Markman) not given 2000-01

**145. Seminar on Infant Development**—For students interested in research skills. Focus is on conceptual and methodological issues related to research on early development; training in experimental design, lab, and observational procedures; and the collection, analysis, and interpretation of data. Limited enrollment.  
1-3 units (A. Fernald) not given 2000-01

**146. Observation of Children**—Seminar on learning about children through guided observations at Bing Nursery School, Psychology's lab for research and training in child development. Physical, emotional, social, cognitive, and language development. Recommended: 60.

*3-5 units, Win, Spr (Hartman)*

**147. Development in Early Childhood**—Supervised experience with young children at Bing Nursery School. Three units require four hours per week in Bing classrooms throughout the quarter; 4 units require seven hours per week; 5 units require 10.5 hours per week. Weekly seminar on developmental issues in the teaching-learning environment at Bing School. Prerequisite: 60 or 146, or consent of instructor.

*3-5 units, Aut (Whitmer)*

*Win, Spr (J. Lepper)*

**152. Social Conflict: Models and Methods of Mediation**—Conceptual models of social conflict and approaches to resolving them through mediation. Examples from a spectrum of conflict settings ranging from minor disputes between individuals to intragroup and intergroup tensions. Existing theories and empirical research. Students generate examples from the Stanford community, and role play methods of mediation in resolving social conflict.

*3 units, Spr (Horowitz, Martinez)*

**153. Introduction to Clinical Psychology**—Survey and analysis of topics in clinical psychology: the history of clinical psychology, models and assessment of personality, behavior, cognition, psychopathology, and approaches to the treatment of abnormal behavior. Emphasis is on current theory, research, and issues in clinical psychology and on the role of clinical psychology in contemporary society. Recommended: 1.

*3 units, Win (Gotlib)*

**154. Selected Topics in Affective Disorders**—See 234.

*3 units, Spr (Gotlib)*

**155. Research Lab on Stereotyping and Prejudice**—Two-quarter practicum. Students participate in on-going laboratory research on stereotyping and prejudice. Emphasis is on theoretical and methodological issues, research design, data collection and analysis. Prerequisites: 1, 70, research experience, and consent of instructor.

*3 units (Eberhardt) not given 2000-01*

**156. Applications of Social Psychology**—(Graduate students register for 271.) The application of social psychological theory and research to a variety of issues and problems: evaluating the impact of social interventions, strategies, and shortcomings in personal and social decision making; the effects of mass media and other sources of social persuasion; problems of conflict resolution and negotiation; applications of social psychology in legal, medical, educational, and business settings. Prerequisites: 1 and 10, or consent of instructor.

*4 units (Ross) not given 2000-01*

**157. Theoretical Approaches in Social Psychology**—(Graduate students register for 279.) The field of social psychology, organized by the theories and systems that tie together wide-ranging findings and phenomena. Possible topics: how attitudes, beliefs, and self-concepts originate in our actions; the importance of construal and cognition in social-psychological phenomena; and the relationships between thought and emotion, and health. Emphasis is on developing a systematic understanding of the field of social psychology.

*3 units (Steele) not given 2000-01*

**158. Emotions: History, Theories, and Research**—See 259. Prerequisite: consent of instructor.

*3 units, Spr (Zajonc)*

**159. Psychological Perspectives on the Self**—(Graduate students register for 223.) The evolution of scientific conceptions of the self; developmental approaches; motivational and cognitive self processes;

applications of self and self-regulation theory to depression, gender roles, and achievement outcomes. Modernist and postmodernist conceptions of self, and the importance of cultural influence. Changes in the nature and phenomenological experience of the self as a function of historical periods. Prerequisites: 1, 10, 70.

*3 units (Steele) not given 2000-01*

**160. Culture and Self**—See 226. Prerequisites: 1, 10, 70.

*3 units, Win (Markus) alternate years, not given 2001-02*

**161. Cultural Psychology**—The cultural sources of diversity in thinking, emotion, motivation, self, personality, morality, development, and psychopathology. Prerequisite: 1 or equivalent. GER:4a (DR:2) (WIM)

*5 units, Spr (Markus)*

**162. Psychology of Gender**—Research and theory on the socialization and psychological development of women and men. The biological, cultural, and social factors that influence gendered behavior. GER:4c (DR:†)

*4 units, Win (Carstensen)*

**163. The Interpersonal Basis of Abnormal Behavior**—The role of interpersonal problems and processes in producing different forms of psychopathology, from neurotic reactions to schizophrenia. The clinical (case study) approach is combined to clarify the origin, nature, and treatment of emotional disorders. Prerequisite: 90.

*3 units, Spr (Horowitz)*

**165. Peace Studies**—(Same as Political Science 133.) Interdisciplinary, dealing with the challenges of pursuing peace in a world where the sources of conflict are many, and regional, ethnic, and religious antagonisms are rising. The art of creating and maintaining peace is analyzed from historical, social, psychological, and moral perspectives. Goals: illustrate the current and potential contributions of various academic disciplines and critical analyses to the study of peace; and to prepare students to think critically and to act responsibly and effectively on behalf of peace. Eight sections: challenges, enemies, theoretical understandings, justice, security, non-violence, public peace processes, peace and you. Seminar format once a week. Limited enrollment. GER:3b (DR:9)

*3 units, Spr (Bland, Ross, Holloway)*

**166. Seminar on Personal and Social Change**—Analysis of the social cognitive approaches to personal and social change. Applications of sociocognitive theory to the modification of psychological dysfunctions in familial, educational, medical, and organizational settings. Ethical and value issues in behavior change.

*3 units, Spr (Bandura)*

**167. Seminar on Aggression**—Analysis of the causes and modification of individual and collective aggression. Major issues in aggression: social labeling of injurious conduct, social determinants of aggression, effects of the mass media, institutionally sanctioned violence, terrorism, psychological mechanisms of moral disengagement, modification of aggressive styles of behavior, and legal sanctions and deterrence doctrines.

*3 units, Win (Bandura)*

**168. Evolutionary Psychology**—See 268.

*5 units, Win (Hirschfeld)*

**169. Seminar on Emotion**—See 277.

*3 units, Aut (Gross)*

**170. Seminar on the Psychology of Gender**—(Graduate students register for 238.) In-depth coverage of a specified topic related to the psychology of gender. Prerequisite: 162.

*3 units (Carstensen) not given 2000-01*

**171. Research Seminar on Aging**—Two-quarter practicum exposes students to multiple phases of research by participating in a laboratory focusing on social behavior in adulthood and old age. Review of current research and participation in ongoing data collection, analysis, and interpretation. Prerequisites: 1, research experience, and consent of instructor.

*4 units, Aut, Win, Spr (Carstensen)*

**173. Mind, Culture, and Society Research Lab**—For undergraduate juniors only, taking Mind, Culture, and Society track. Offered over two quarters. The first quarter is a lecture series on current research topics in mind, culture, and society. During the second quarter, students participate in a specific research project.

*4-5 units, Win, Spr (Eberhardt)*

**174. African American Psychology**—Introduction to ethnic psychology, specifically, the psychological dimensions of the Black experience in America. Lectures and readings. Black psychology from its evolution as a concentration area in the social sciences to present concerns that impact Black Americans' mental health. Students are encouraged to expand on the methodological constructs employed in the study of Black Americans. Section offered.

*3-4 units, Aut (McCants)*

**175. Seminar on Topics in Identity Development**—Issues affecting identity development from adolescence throughout adulthood. Lectures/discussion. Topics: the effect of group dynamics on identity; the impact of social factors such as racism, stereotypes, and culture; how a person's identity affects education and self-esteem.

*3 units, Win (McCants)*

**176. Carl Jung and Analytical Psychology**—Introduction to the person of Jung, his seminal philosophical perspectives, and their impact on modern thought and life. The formation of analytical psychology with regards to Jung's past relationship with Freud and later emergence as a prominent 20th-century thinker. Emphasis is on the archetypal themes of the shadow, animas/animus (feminine/masculine) and puer/senex (youth/elder). The function of dreams and the interplay between the Jungian paradigm and spirituality.

*4 units (Daher) not given 2000-01*

**177. Senior Seminar on Mind, Culture, and Society**—For undergraduate seniors only taking Mind, Culture, and Society track.

*3 units (Eberhardt) given 2001-02*

**178. Stigma and Marginality**—See 263.

*3 units (Eberhardt) alternate years, given 2001-02*

**179. Culture and Cognition**—See 278.

*5 units, Aut (Hirschfeld)*

**180. Social Psychological Perspectives on Stereotyping and Prejudice**—See 245. Prerequisites: 1, 10, and 70.

*4 units (Eberhardt) alternate years, given 2001-02*

**181. Social Influence and Persuasion**—(Same as 229.) Theories and research on social influence, conformity, obedience, and persuasion from Aristotle to the present, looking at the relative effectiveness of direct approaches to persuasion, e.g., advertising and political campaigns; and less direct strategies, e.g., inducing individuals to engage in "self-persuasion" in order to justify their own prior actions. Societal issues involving social influence, including attempts at reducing prejudice and curbing aggression, and the subtle forms of persuasion that occasionally take place during police interrogation. Prerequisite: 1.

*3 units, Spr (Aronson)*

**193. Careers in Psychology: Academic and Applied**—See 291.

*2 units (Markus, Ross) not given 2000-01*

**194. Reading and Special Work**—Independent study. Can be repeated for credit. Prerequisite: consent of instructor.

*1-3 units, any quarter (Staff)*

**195. Special Laboratory Projects**—Independent study. Can be repeated for credit. Prerequisites: 1, 101, and consent of instructor.

*1-6 units, any quarter (Staff)*

**196. Contemporary Psychology: Overview of Theory, Research, Applications**—For junior and senior psychology majors. The state of the field of psychology in each of the primary areas represented by the department; psychobiology, cognitive neuroscience, cognitive science, developmental psychology, personality and abnormal psychology, and social psychology. Faculty in each area present an overview of current theory, research, and applications in their domain of expertise during weekly lectures, integrating the wide range of knowledge majors have gathered from their more specialized course work. Discussion sections. Recommended: 1.

*3 units, Aut (Thomas, Van der Wege, Zimbardo)*

**197. Advanced Research**—Limited to students in senior honors program. Weekly research seminar, independent research project under the supervision of an appropriate faculty member. A detailed proposal is submitted at the end of Autumn Quarter. Research continues during Winter and Spring quarters as 198. A report demonstrating sufficient progress is required at the end of Winter Quarter.

*1-4 units, Aut (Tversky)*

**198. Senior Honors Research**—Limited to students in the senior honors program. Work includes finishing the research and data analysis, written dissertation, and presentation at the Senior Honors Convention.

*1-4 units, Win, Spr (Tversky)*

**199. Psychological Aspects of Addiction**—The medical, psychological, and social issues involved with alcohol and drug abuse and dependence. Students are presented with the etiological theories and psychological perspectives on addiction. Limited enrollment.

*3 units, Aut (Matano)*

## PRIMARILY FOR GRADUATE STUDENTS

Undergraduate students admitted only by consent of instructor.

**202. Cognitive Neuroscience**—Graduate core course in cognitive neuroscience. The anatomy and physiology of the brain. Methods: single-cell neurophysiology, electrical stimulation of the brain, neuroimaging, neuropsychology, psychophysics, theory and computation. Neuronal pathways and mechanisms of: vision, attention, memory, language, motor control, emotion, and consciousness. Prerequisite: 207 or consent of instructor.

*3 units, Spr (Wandell, Gabrieli)*

**203. Foundations of Vision**—The quantitative behavioral and neural aspects of human vision. Image formation by the eye, retinal sampling and wavelength encoding, neural encoding within the retina and cortex; performance measures including spatial contrast sensitivity, localization, color sensitivity, multiresolution representations of image data; color, motion, and depth perception.

*1-3 units (Wandell) alternate years, given 2001-02*

**205. Foundations of Cognition**—Advanced survey of cognitive psychology and cognitive science. Major topics: perception, imagery, attention, memory, similarity, categories and concepts, learning, reasoning, decision making, planning, language, emotions, morality, mate choice, consciousness. Focus is on what computational problems the mind is designed to solve, how it solves them, and how those solutions might be implemented in the brain. Central themes for discussion: the nature of mental representations, inference under uncertainty, rationality vs. irra-

tionality, modular vs. general-purpose design, learning vs. evolutionary origins. Prerequisite: 207 or consent of instructor.

*1-3 units, Aut (Tenenbaum)*

**206. Behavioral Neuroscience**—The biological substrates of behavior, emphasizing topics currently being investigated by resident and visiting neuroscientists at Stanford. Possible topics: neuroanatomical and neurophysiological aspects of vision; audition; motor control, learning, and memory; and hormonal and neurochemical aspects of stress and motivation.

*1-3 units, Spr (Wandell, Wine)*

*alternate years, not given 2001-02*

**207. Proseminar for First-Year Ph.D. Graduate Students**—Required of and limited to first-year Ph.D. graduate students in psychology. Survey of major issues in contemporary psychology with their historical backgrounds.

*2-3 units, Aut (M. Lepper)*

**210. Memory and Learning**—Major topics in human memory, emphasizing information-processing approaches to short-term memory, organization and long-term memory, forgetting, retrieval processes, prose memory, imagery, emotional memory, autobiographical memory, and skills. Prerequisite: graduate standing in psychology or consent of instructor.

*4 units, Win (Bower)*

**211. Developmental Psychology**—Prerequisite: 207 or consent of instructor.

*1-3 units, Win (Flavell, Johnson)*

**212. Social Psychology**—Prerequisite: 207 or consent of instructor.

*1-3 units, Aut (M. Lepper, Ross)*

**213. Personality**—Survey of theory and research in personality. Prerequisite: 207 or consent of instructor.

*3 units (Carstensen) alternate years, given 2001-02*

**214. Psycholinguistics**—Prerequisite: graduate standing in Psychology or consent of instructor.

*1-3 units, Spr (H. Clark)*

**215. Mind, Culture, and Society**—Social psychology from the context of society and culture. Focus: the interdependence of psychological and sociocultural processes; how sociocultural factors shape psychological processes; how psychological systems shape sociocultural systems. Conceptualizations of the interdependence of psychological processes and sociocultural context. Use of theoretical developments to understand social issues, problems, and polity. Works of Baldwin, Mead, Asch, Lewin, Burner, and contemporary theory and empirical work on the interdependence of psychology and social context as constituted by gender, ethnicity, race, religion, region of the country, and part of the world. Prerequisite: 207 or consent of instructor.

*3 units, Win (Markus, Steele)*

**216. Graduate Abnormal Psychology**—The major mental and personality disorders are examined using concepts from contemporary psychological thought. Basic principles are drawn from social learning, and psychodynamic and interpersonal perspectives and are applied systematically to each disorder to clarify its etiology, manifestations, and goals of treatment.

*3 units, Win (Horowitz)*

**217. Selected Topics and Methods in Cultural Psychology**—Discussion and critical examination of conceptual and methodological issues in cultural psychology. Topics: the mechanisms by which culture influences psychological and social processes in monocultural and multicultural contexts; the relations between culture and biology; the measurement of culture; the development of culturally appropriate instruments and tasks;

and the use of various questionnaire, interview, observational, and physiological methods to study cultural influences in human behavior.

*1-3 units, Spr (Tsai)*

**218. Social Psychology Seminar**—Discussion of social psychological theories and research. Offered in conjunction with 212. For psychology graduate students only.

*1-2 units, Aut (Eberhardt)*

**219. Graduate Seminar on Selected Topics in Cognition**—Prerequisite: consent of instructor.

*1-3 units, Aut (Tversky)*

**220. Graduate Seminar: Special Topics in Cognitive Development**—Prerequisite: graduate standing in psychology or consent of instructor.

*1-3 units (Markman) not given 2000-01*

**221. Applied Vision and Image Systems**—Lectures/demonstrations illustrate the design and control of color imaging devices (display, printers, cameras, and scanners). Aspects of human vision relevant to software and hardware design. Topics: digital halftoning, color calibration, color metrics, flicker sensitivity, motion compensation, human spatial resolution, visual masking, JPEG principles, printer design, scanner design, color software architecture. Lab.

*1-3 units, Win (Wandell)*

**222. Graduate Seminar in Cognitive Neuroscience**—(Undergraduates register for 123.) For students who are already or planning to become involved in research. Critical reviews of theory and ongoing research in human cognitive neuroscience. Prerequisite: consent of instructor.

*1-3 units, Aut, Spr (Gabrieli)*

*Win (Staff)*

**223. Psychological Perspectives on the Self**—See 159.

*1-3 units (Steele) not given 2000-01*

**224. Learning and Inference in Humans and Machines**—The connections between computational models and experimental studies of human learning and inference in several domains: visual perception, memory and information retrieval, supervised and unsupervised categorization, language acquisition, inductive and causal reasoning. Goals: to reach a better understanding of human learning in computational terms and to bring computational systems closer to the capacities of human learners. Probabilistic models and statistical inference are unifying themes. Lectures, presentations, and discussion, with supplementary computer assignments. Final modeling project or paper required. Prerequisite: consent of instructor. Recommended (one or more): 205, 210; Computer Science 221, 228, 229; Statistics 315A,B,C.

*1-3 units, Spr (Tenenbaum)*

**225. Cognition and Aging**—See 136.

*3 units, Spr (Spieler)*

**226. Culture and Self**—(Undergraduates register for 160.) Recent perspectives on the nature and functioning of self; anthropological and psychological literature on the self in various cultural contexts; and the consequences of variation in selfhood for cognition, learning, emotion, motivation, and psychopathology.

*1-3 units, Win (Markus) alternate years, not given 2001-02*

**227. Seminar on Language Processing**—Processing the differences that languages may impose on their speakers; similarities and differences in how speakers of more than one language and monolinguals speak and comprehend. Do speakers of a language with grammatical gender have to prepare words further in advance or operate under a heavier memory load? Under what circumstances might a bilingual's languages interfere with or support each other?

*3 units, Spr (Griffin)*



**228. Ion Transport and Intracellular Messengers**—See 121.*1-3 units, Spr (Wine) alternate years, not given 2001-02***229. Social Influence and Persuasion**—See 181.*3 units, Spr (Aronson)*

**231. Graduate Seminar: Self-Efficacy**—The origins, mediating mechanisms, and diverse effects of people's beliefs in their efficacy to exercise control over events in their lives. Alternative theories of perceived control; the nature and structure of self-efficacy belief systems; major sources of efficacy beliefs; the processes through which they affect human functioning; developmental analysis of efficacy beliefs over life course; the application of self-efficacy theory to cognitive development, health functioning, clinical dysfunctions, organizational functioning, and athletic performance; the exercise of collective efficacy to accomplish social change.

*1-3 units (Bandura) not given 2000-01***233. Counseling Theories and Interventions from a Multicultural Perspective**—(Enroll in Education 233A.)*3 units (LaFromboise) not given 2000-01*

**234. Selected Topics in Affective Disorders**—(Undergraduates register for 154.) Current research topics in the study of affective disorders. Topics: epidemiology and phenomenology of affective disorders, psychological theories of depression, gender differences in affective disorders, cognitive and social functioning of depressed persons, psychobiology of affective disorders, depression in children, postpartum depression, suicide issues in the treatment of depression, and cultural aspects of affective disorders. Prerequisite: graduate standing in psychology or consent of instructor.

*1-3 units, Spr (Gotlib)***235. American Indian Mental Health and Education**—(Enroll in Education 340X.)*3 units, Spr (LaFromboise)*

**236. Seminar on Psychophysiology**—(Undergraduates register for 124.) Overview of psychophysiology, the empirical study of mind-body relations. Focus is on two response systems (electrodermal and cardiovascular) and applications to lie detection, emotions, and health. Critical thinking skills are emphasized; hands-on lab.

*4 units, Win (Gross)*

**237. Career and Personal Counseling in Culturally Diverse Settings**—(Same as Education 234.) Methods of integrating career and personal counseling with clients and counselors from differing backgrounds. Practice with selected assessment instruments. Case studies of bicultural role conflict. Informal supervised experience.

*3 units (Krumboltz) not given 2000-01*

**238. Seminar on the Psychology of Gender**—See 170. Prerequisite: graduate standing in psychology.

*1-3 units (Carstensen) not given 2000-01***240. Language Acquisition I**—(Enroll in Linguistics 240.)*4 units, Aut (E. Clark)***241. Language Acquisition II: Lexicon and Syntax in Acquisition**—(Enroll in Linguistics 241.)*1-4 units, Win (E. Clark)*

**242. Conceptual Organization and Development**—(Undergraduates register for 144.) Theories and research in conceptual organization and development, critically evaluated. Topics: the acquisition of categories and category terms informed by the general problem of induction, by philosophical and psychological analyses of the nature of human categories (natural kind terms, family resemblances), by recent arguments how the acquisition of category terms is guided by constraints children place

on possible word meanings, and by more traditional theories of cognitive development. Prerequisite: graduate standing in psychology or consent of instructor.

*1-3 units (Markman) not given 2000-01*

**243. General Development Seminar**—Prerequisite: consent of instructors.

*1-2 units, Win (Flavell, Johnson)*

**244. The Psychology of Aging**—Critical examination of theory and research in gerontology. Normal and abnormal changes that occur in biological, cognitive, and psychological aging. Emphasis is on the environmental factors that influence the aging process. Prerequisite: graduate standing in psychology or consent of instructor.

*1-3 units (Carstensen) not given 2000-01*

**245. Social Psychological Perspectives on Stereotyping and Prejudice**—Classic and contemporary social psychological approaches to prejudice and stereotyping. Emphasis is on how stereotypes are employed and maintained; and the influence of stereotyping and prejudice on behavior in a variety of domains including education, employment, politics, and law. Limited enrollment.

*4 units, Aut (Eberhardt) alternate years, not given 2001-02*

**246. Perception Lecture Series**—Current research topics in perceptual psychology, visual neuroscience, machine vision, and image processing. Speakers from research institutions in the Bay Area and around the world. Prerequisite: 203.

*1 unit (Heeger) not given 2000-01***248. Introduction to Test Theory**—(Enroll in Education 252.)*3-4 units (Haertel) not given 2000-01***249A. Problems in Measurement: Item Response Theory**—(Enroll in Education 353A.)*3 units (Haertel) not given 2000-01*

**252. Statistical Methods for Behavioral and Social Sciences**—(Undergraduates register for 102.) For students who seek experience and advanced training in empirical research. Analysis of data from experimental through factorial designs, randomized blocks, repeated measures; regression methods through multiple regression, model building, analysis of covariance; categorical data analysis through two-way tables. Integrated with the use of statistical computing packages. Prerequisite: 10 or equivalent. (PSE)

*1-6 units, Aut (Thomas)*

**253. Statistical Theory, Models, and Methodology**—(Undergraduates register for 103.) Practical and theoretical study of advanced data analytic techniques such as loglinear models, signal detection, meta-analysis, logistic regression, reliability theory, and factor analysis. Prerequisite: 252 or Education 257.

*1-3 units (Thomas) not given 2000-01***255. Graduate Seminar: Selected Topics in Personality and Abnormal Psychology**—Prerequisite: consent of instructor.*1-3 units, Aut (Horowitz)*

**257. Supervised Practicum**—Satisfies INS requirements for Curricula Practical Training. Relevant experience for graduate students as part of their program of study. Can be repeated for credit. Prerequisites: graduate standing in psychology, consent of adviser.

*3-5 units, Aut, Win, Spr, Sum (Staff)*

**258. Graduate Seminar in Social Psychology Research**—For students who are already or are planning to become involved in research on social construal and the role that it plays in a variety of phenomena, notably the origin and escalation of conflict.

*1-3 units, Aut, Win, Spr (Zajonc)*

**259. Emotions: History, Theories, Research**—(Undergraduates register for 158 with consent of instructor.) Theoretical and empirical issues in the domain of emotions. The history of emotion theories, current approaches, and the interaction between emotion and cognition.

*1-3 units, Spr (Zajonc)*

**261. Learning and Cognition in Activity**—(Same as Education 295.) Introduction to the results and methods of research on learning, understanding, reasoning, problem solving, and remembering, considered as aspects of participation in socially organized activity. Analyses focus is on the principles of coordination that support cognitive achievements and learning in activity settings in work and school environments.

*3 units, Spr (Greeno)*

**262. Memory Systems**—Recent findings indicate different kinds of memory are mediated by separable neural networks. Different patterns of memory failures are seen in a variety of neurological disorders and in terms of functional consequences for normal memory, such as unconscious learning. Prerequisites: 50, 201, or consent of instructor.

*1-3 units (Gabrieli) not given 2000-01*

**263. Stigma and Marginality**—(Undergraduates register for 178.) The perceptions and strategies of the targets of prejudice and discrimination, with emphasis on race and ethnicity. Topics: social perceptions and the judgments of targets, racial identity, behavioral consequences of prejudice and discrimination, and legal/policy implications. Readings from social psychology, African-American studies, sociology, and law. Limited enrollment.

*3 units (Eberhardt) alternate years, given 2001-02*

**264. Selected Topics in Human Learning**—Recent empirical and theoretical analyses of verbal learning, learning from text, learning of concepts, and intellectual skills. Emphasis is on information processing theories of memory and retrieval. Readings from recent research journals with topics determined partly by students' interests. Discussion format. Prerequisite: 210 or consent of instructor.

*1-3 units, Spr (Bower)*

**267. Vision and Image Processing**—Introduction to image processing through a combination of lectures and hands-on experience in a computer lab. Topics: image representation, sampling and filtering, image segmentation and mosaicing, image warping and morphing, motion analysis, image statistics, restoration, synthesis, and compression.

*1-3 units (Heeger) alternate years, given 2001-02*

**268. Evolutionary Psychology**—(Undergraduates register for 168; same as Anthropological Sciences 238.) The natural history of higher-order cognition, using evolutionary theory to evaluate current debates about cognitive architecture. Focus is on analyses relevant to anthropology, emphasizing the relationship between cultural variation and cognitive universals. Enrollment limited to 20.

*5 units, Win (Hirschfeld)*

**269. Graduate Seminar in Personality Research**—Can be repeated for credit. Prerequisite: graduate standing in psychology.

*1-2 units, Aut, Win, Spr (Gottlib)*

**271. Applications of Social Psychology**—See 156.

**272. Special Topics in Psycholinguistics**—May be repeated for credit. Prerequisite: consent of instructor.

*1-3 units, Win (H. Clark)*

**275. Graduate Research**—Intermediate-level research undertaken with members of departmental faculty. Prerequisite: consent of instructor.

*1-15 units (Staff)*

**276. Computational Neuroscience**—Introduction to computational neuroscience: the biophysics of computation; models of vision, audition, learning, and development; self-organizing networks. Emphasis is on theoretical and computational models and how to construct models of neurons and neural systems.

*1-3 units (Heeger) alternate years, given 2001-02*

**277. Seminar on Emotion**—(Undergraduates register for 169.) Overview of the scientific study of emotion. Topics: models of emotion, emotion antecedents, emotional responses (facial, subjective, and physiological), functions of emotion, emotion regulation, individual differences, and health implications. Focus is on experimentally tractable ideas.

*3 units, Aut (Gross)*

**278. Culture and Cognition**—(Undergraduates register for 179; same as Anthropological Sciences 207.) Theories of culture make strong claims about how people represent the world to themselves and others, particularly claims about perception, memory, and reasoning. The basic anthropological presumptions about cultural knowledge (e.g., that members of different cultures deploy incommensurate world views) in light of recent advances in cognition science, and how well characterizations of thinking and reasoning hold up in a cross-cultural perspective. Enrollment limited to 20.

*5 units, Aut (Hirschfeld)*

**279. Theoretical Approaches in Social Psychology**—See 157.

*1-3 units (Steele) not given 2000-01*

**280. Doctoral Research**—For dissertation. Prerequisite: consent of instructor.

*1-15 units (Staff)*

**281. Practicum in Teaching**—Enrollment limited to students serving as teaching assistants in psychology courses. Can be repeated for credit.

*1-4 units, Aut, Win, Spr (Staff)*

**283. Interdisciplinary Seminar on Conflict Resolution**—(Same as Economics 386, Management Science and Engineering 459, Law 611.) Addresses problems of conflict resolution and negotiation from an interdisciplinary perspective. Presentations by faculty and by scholars from other universities.

*1-2 units, Win (Alexander, Arrow, Ross, Wilson)*

**291. Careers in Psychology: Academic and Applied**—(Undergraduate students register for 193.) Intended for graduate students and advanced undergraduates who want an opportunity to meet with people who have undertaken academic and nonacademic careers. Speakers discuss their experiences and reflect on their careers and the ways in which their graduate and undergraduate education prepared or failed to prepare them for their careers. (AU)

*2 units (Markus, Ross) not given 2000-01*

**297. Seminar for Coterminial Masters' Students**—Discussion of contemporary issues and student research. Student and faculty presentations.

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