

# PSYCHOLOGY

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Courses offered by the Department of Psychology have the subject code PSYCH, and are listed in the "Psychology (PSYCH) Courses" section of this bulletin.

The courses and research opportunities in the Department of Psychology introduce students to the 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 IN PSYCHOLOGY

### BACHELOR OF ARTS IN PSYCHOLOGY

*Major Requirements*—Students declaring a major in Psychology must complete a minimum of 70 units of course work in Psychology, 60 of which must be taken in the Psychology department. The remaining 10 units can be taken outside of the Psychology department but must be pre-approved by the student services office or faculty adviser. These courses should represent a coherent

thematic focus. One way to achieve this focus is through a field of study. Courses taken to satisfy the 70-unit requirement must be taken for a grade of 'C-' or better (except for courses offered only on a satisfactory/no credit basis). Majors must take PSYCH 1, Introduction to Psychology, and PSYCH 10, Introduction to Statistical Methods, or a comparable Statistics course. Advanced placement (AP) credit may no longer be used toward the Psychology major requirements. Beyond these two required courses, students must complete at least five of the following eleven core Psychology courses, with a minimum of two from each area A and B:

Area A Courses:

BIO 20. Introduction to Brain and Behavior

PSYCH 30. Introduction to Perception

PSYCH 45. Introduction to Learning and Memory

PSYCH 50. Introduction to Cognitive Neuroscience

PSYCH 55. Introduction to Cognition and the Brain

Area B Courses:

PSYCH 60. Introduction to Developmental Psychology

PSYCH 70. Introduction to Social Psychology

PSYCH 75. Introduction to Cultural Psychology

PSYCH 80. Introduction to Personality Psychology

PSYCH 90. Introduction to Clinical Psychology

PSYCH 95. Introduction to Abnormal Psychology

Students who declared a major in Psychology prior to the 2005-06 academic year may choose to adhere to the 55-unit major requirement, taking PSYCH 1 and 10, five core courses, and elective courses, totaling 55 units.

Students must take one Writing in the Major (WIM) course in Psychology, and should check the *Stanford Bulletin* yearly as these courses may change. The department also strongly recommends that all majors take at least one advanced seminar.

Students may count up to 10 units of research, independent study, and practica (including but not limited to PSYCH 194, 195, 281) toward the Psychology major. Students who are teaching assistants for a Psychology course or are enrolled in the senior honors program are allowed up to 15 units in independent study and research. Any units beyond the limit of 10 or 15 may be counted toward the 180 units required for graduation.

Summer Quarter Psychology courses are not equivalent to courses given during the regular academic year and, while applicable toward the 70 units needed for the major, may not be used to fulfill the core course requirement. Additionally, a course taken during the Summer Quarter cannot be used to replace the grade of a non-Summer Quarter course, even if the title and units of the two courses are the same.

*Beyond the Minimal Requirements*—The following recommendations may be helpful to students who wish to plan a program which goes beyond the minimal requirements listed above:

Within the general major, the student may take advanced undergraduate or graduate courses, including seminars. The student may also take advantage of widespread opportunities for directed research, working closely with individual faculty and graduate students.

1. The student may apply to the senior honors program, described below.
2. The student may elect to pursue one of four fields of study: Cognitive Sciences; Health and Development; Mind, Culture, and Society; or Neuroscience, described below.

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 in fields such as business, counseling, education, law, or medicine.

### CREDIT FROM OUTSIDE THE DEPARTMENT

Psychology majors must complete at least 60 units of course work toward their major at Stanford within the Psychology department. Psychology minors may count no more than a total of 10 units credit from outside the department toward the minor. Both majors and minors may use only one course from outside the department to fulfill core course requirements. Additional courses may be used to fulfill the 70-unit major requirement, but may not be counted as core courses.

There are two types of credit from outside the department:

external transfer credit for courses taken at institutions other than Stanford and credit for courses in other Stanford departments. A student must have already declared Psychology as a major or minor in order to submit a petition for transfer credit. Stanford credit for courses completed at other institutions must have been granted by the External Credit Evaluation section of the Registrar's Office; those units may be applied toward the 180 units required for graduation. To have credit from outside the department evaluated to fulfill requirements toward the Psychology major or minor, students must complete an Undergraduate Petition form, available from the student services office, and submit it with a course syllabus. Students requesting external transfer credit must also submit a copy of the signed transcript from the External Credit Evaluation section of the Registrar's Office showing the number of Stanford units granted for the course. The Psychology department then evaluates external credit courses and courses from other Stanford departments to determine if they can be applied toward Psychology major or minor requirements.

## FIELDS OF STUDY

Students in the major program, including those in the senior honors program, may elect to specialize in one of four fields of study: Cognitive Sciences; Health and Development; Mind, Culture, and Society; or Neuroscience. Fields of study consist of a coherent set of courses leading to advanced undergraduate or even graduate-level courses in an area. 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 significance 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, as well as for graduate work in Psychology.

Specialization in a field of study is optional, although students who do not wish to complete all the requirements for a track may still want to use the track as a guideline for an integrated program in Psychology. Students who choose to complete a field of study must meet the requirements for the major plus the additional requirements designated for the field of study. Typically the courses required for a field of study include one or two required courses, four to six recommended courses in Psychology, one or two advanced seminars, and three or four courses in related disciplines. Psychology courses completed for the field of study count toward satisfying the major requirements. Courses from other departments listed for the field of study may count toward the 10 outside units for the major requirement, but must be pre-approved by the student services office or faculty adviser.

## HONORS PROGRAM

The senior honors program is designed for exceptionally able Psychology majors 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) two letters of recommendations by faculty and/or graduate students. Applications are available late Spring Quarter and are to be turned in to the student services office with a current transcript and recommendations by April 1, prior to the student's senior year.

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

During Autumn Quarter of their senior year, honors program students participate in a weekly seminar. Initially, discussions are on general methods and issues in psychological research, but most of the sessions are devoted to discussions of students' presentations of their proposed research. During the quarter, students meet with their advisers to develop their experimental program and begin data collection. At the end of Autumn Quarter, students turn in a written proposal. Winter and Spring quarters are devoted to completing the research, analyzing the data, and writing the thesis, which is submitted mid-May. Students give oral presentations of their projects at the annual Honors Convention, scheduled for the day

between classes and exams. This convention is attended by undergraduates, graduate students, and faculty.

## MINOR IN PSYCHOLOGY

*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 35 units in Psychology is required for the minor, including PSYCH 1, Introduction to Psychology, and PSYCH 10, Introduction to Statistical Methods, or a comparable statistics course. Advanced placement (AP) credit may no longer be used towards the Psychology minor. The minor must include three of eleven core courses, with a minimum of one from each of two areas (A: BIO 20; PSYCH 30, 45, 50, 55; and B: 60, 70, 75, 80, 90, 95) and elective Psychology courses of at least three units each, totaling 35 units. Students who declared a Psychology minor prior to the 2002-03 academic year may choose any three of the eleven core courses. Students who declared a Psychology minor prior to the 2005-06 academic year may choose to complete seven total courses: PSYCH 1 and 10, three core courses, and two elective courses. Independent study, research, and practica cannot be counted toward the minor. Summer Quarter Psychology courses are not applicable toward the 35 units needed for the minor. All courses used to fulfill the requirements of the minor must be passed with a grade of 'C-' or better, except for courses offered only on a satisfactory/no credit basis. No more than 10 units of transfer credit may be counted toward the Psychology minor.

## GRADUATE PROGRAMS IN PSYCHOLOGY

### COGNITIVE SCIENCE PROGRAM

Psychology participates, along with the departments of Computer Science, Linguistics, and 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 psychology. For information or course approval, contact the student services office.

### PSYCHOLOGY COLLOQUIUM

The Psychology Colloquium meets on most Wednesday afternoons at 3:45 pm. Speakers from Stanford and other institutions present topics of current interest. Graduate students are expected to attend. Additional announcements may be found at [http://psychology.stanford.edu/events\\_colloquium.html](http://psychology.stanford.edu/events_colloquium.html).

### MASTER OF ARTS IN PSYCHOLOGY

The Department of Psychology normally offers a Master of Arts degree only to students concurrently enrolled in its Ph.D. program or to students currently pursuing Stanford B.A. or M.A. degrees. Admission to the program is by Psychology faculty nomination only. 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. General University requirements for the master's degree are described in the "Graduate Degrees" section of this bulletin.

Stanford undergraduates who would like advanced training in Psychology may apply for a coterminal M.A. degree in Psychology. To do so, students should consult with the student services office. 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 nomination by a member of the Psychology faculty willing to serve as the student's master's degree adviser. This program is limited in

size and admission is selective. Applicants must have earned a minimum of 120 units towards graduation as shown on the undergraduate transcript. The department's deadline for the submission of an application to the coterminal program is January 12.

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

Students must complete at least 45 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 45 units, at least 27 must be in Psychology courses numbered 200 or above. Units from research, teaching, practica, independent study, and lab courses, such as PSYCH 258, 269, 275, 281, 282, and 297, may not be counted toward these 27 units. Two of the graduate courses of at least 3 units each (one from Area A and one from Area B below) are required. In addition, at least one upper division statistics course is required. The course must be approved by the student's adviser. It is recommended that all coterminal students enroll in PSYCH 196, Contemporary Psychology.

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. Units from research, teaching, practica, independent study, and lab courses, such as PSYCH 258, 269, 275, 281, 282, and 297, may be counted toward the remaining required 18 units. Psychology courses numbered in the 100-level and courses from other Stanford departments may be used to satisfy the remaining 18 units. Courses specifically for undergraduates, such as undergraduate honors courses, and courses offered in the Summer Quarter may not be counted toward the master's program unit requirements. Demonstration of competence in the design and execution of psychological research is also required for receipt of the master's degree. This demonstration entails completion of a master's thesis containing original research. If the student is currently doing a senior honors thesis, this honors thesis may be accepted as proof of research competence provided the honors thesis is judged to be master's level research by the student's adviser and the department's Committee on Graduate Studies. If the student has completed an honors thesis in Psychology in the prior year, the student would be expected to continue independent research during the coterminal year and to submit this research in a written report which, together with the completed honors thesis, would constitute the master's thesis. All students are required to make an oral presentation of their research during the Spring Quarter, and to present their thesis or written report in June. Applicants to the coterminal program must have an adviser in the department, or approved by the department, who agrees to supervise the student's research. Students in the program may be terminated at the beginning of the Winter Quarter if they do not have an adviser, or if they are not making satisfactory progress in research or course work.

#### Area A Courses:

PSYCH 202. Cognitive Neuroscience  
PSYCH 205. Foundations of Cognition  
PSYCH 210. Memory and Learning  
PSYCH 221. Applied Vision and Image Systems  
PSYCH 228. Ion Transport  
PSYCH 251. Affective Neuroscience  
PSYCH 261. Emotion  
PSYCH 261A. Learning and Cognition in Activity

#### Area B Courses:

PSYCH 211. Developmental Psychology  
PSYCH 212. Social Psychology  
PSYCH 213. Personality and Psychopathology  
PSYCH 215. Mind, Culture, and Society  
PSYCH 217. Topics and Methods in Cultural Psychology  
PSYCH 259. Emotions: History, Theories, Research  
PSYCH 271. Applications of Social Psychology

In exceptional cases, students concurrently enrolled in another doctoral or professional program at Stanford may also apply for the M.A. degree. Such applicants also consult with the student services office.

## DOCTOR OF PHILOSOPHY IN PSYCHOLOGY

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 general Graduate Record Examination as part of the application. GRE subject scores are recommended.

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

In addition to fulfilling Stanford University requirements for the degree, the following departmental requirements are stipulated.

*First-Year Course Requirements*—During the first year of graduate study, the student must take PSYCH 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 following:

PSYCH 202. Neuroscience  
PSYCH 205. Foundations of Cognition  
PSYCH 211. Developmental Psychology  
PSYCH 212. Social Psychology  
or PSYCH 215. Mind, Culture, and Society  
PSYCH 213. Personality

Students in each area may be required to take up to two additional non-core graduate courses in their area of specialization.

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 10 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. The deadline for filing this report is the first Monday of June.

*Second Year Course Requirements*—By the end of the second year of graduate study, the student must complete the core courses listed above and take a second approved graduate course in statistics.

*Third-Year and Beyond*—Students are expected to form a research committee, which must include the dissertation reading committee, before the initiation of the dissertation research. The research committee includes the dissertation adviser and consists of at least three faculty members, at least two of whom should be in the Psychology department. For University guidelines for the composition of the dissertation reading committee, see the "Graduate Degrees" section of this bulletin.

The research committee must meet no later than the first day of classes of Spring Quarter of the third year, and determines the timeline for further development of the dissertation research project. Subsequent meetings are triggered by the completion of one of two documents: a dissertation proposal (DP) or a conceptual analysis of the dissertation area (CADA). The timing and sequencing of the DP and CADA are developed by the student in consultation with the committee. As a general guide, one of the two preliminary elements (CADA or DP) should be completed by the end of the third Summer Quarter and the second should be completed by the end of the fourth Spring Quarter. Students are free to alter the membership of the committee at any time during the process, subject to consultation with the adviser.

The DP should be a description of the proposed research. The CADA provides a framework for the research topic of the dissertation, addresses the central issues within the specialty area, and reviews the pertinent literature.

*Advanced Course or Minor Requirements*—The candidate must complete 12 units of advanced graduate course work or a Ph.D. minor in another department. If a student waives the minor requirement in favor of the 12 advanced units, the student must fulfill the advanced course requirement by taking (a) non-core graduate courses required by a particular area, or (b) graduate-level courses in other departments comparable in quality to Psychology's graduate courses. If there is any question about comparability, the student should consult the adviser, student services, and, in some cases, the graduate education committee chair before taking the course.

*Orals*—The candidate must pass the University oral examination, which also serves as a dissertation defense. A

committee is formed to review the oral examination, including the research committee and one oral examination committee chair from outside of the Psychology department. The oral examination consists of a 40-45-minute presentation to the department of the completed dissertation research. Parents and friends are welcome to attend. Following the presentation, the student and the committee convene for a discussion of the dissertation and the presentation.

**Dissertation Requirements**—The candidate must complete a dissertation satisfactory to the dissertation reading committee prior to the oral examination. Minor revisions to formatting may be made after the oral examination.

Ph.D. candidacy expires five years after admission to candidacy at the end of the second year of study. 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 the first Monday of June. If the student fulfills the academic promise displayed upon entrance, he or she is invited to continue working towards the doctorate.

The first-year evaluation is primarily based on three factors:  
quality of research carried out in the first year

3. performance in courses (especially required courses)
4. 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 must 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 10 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 at least five Psychology courses during their graduate study. Of the courses, two must be PSYCH 1, Introduction to Psychology, or PSYCH 10, 252 or 253, 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. Some students may be invited to offer a supervised, but essentially independent, seminar during their final year of graduate study.

## PH.D. MINOR IN PSYCHOLOGY

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 PSYCH 275 (graduate-level research). Crosslisted 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).

# PSYCHOLOGY (PSYCH) COURSES

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For information on undergraduate and graduate programs in the Department of Psychology, see the "Psychology" section of this bulletin.

## UNDERGRADUATE COURSES IN PSYCHOLOGY

### PSYCH 1. Introduction to Psychology

Human behavior and mental processes including the nervous system, consciousness, learning, memory, development, emotion, psychopathology, interpersonal process, society, and culture. Current research. GER:DB-SocSci

5 units, Aut (Gross, J), Win (Knutson, B), Spr (Monin, B)

### PSYCH 7Q. Language Acquisition

Stanford Introductory Seminar. Preference to sophomores. How do infants learn language so effortlessly? Why is it more difficult to learn a language as an adult? Theories of first and second language development and experimental techniques for reading children's minds.

3 units, Aut (Fernald, A)

### PSYCH 8N. Life Span Development

Stanford Introductory Seminar. Preference to freshmen. People continue to change in systematic ways throughout life, but developmental psychology has focused mostly on childhood. Focus is on conceptual models that direct developmental research on adulthood and old age, and the empirical literature concerning developmental changes in cognition, motivation, and emotion. GER:DB-SocSci

3 units, Spr (Carstensen, L)

### PSYCH 10. Introduction to Statistical Methods: Precalculus

(Same as STATS 60, STATS 160.) 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:DB-Math

5 units, Aut (Thomas, E), Win (Walther, G), Spr (Boik, J), Sum (Staff)

### PSYCH 12N. Self Theories

Stanford Introductory Seminar. Preference to freshmen. The impact of people's belief in a growing versus fixed self on their motivation and performance in school, business, sports, and relationships. How such theories develop and can be changed. GER:DB-SocSci

3 units, Aut (Dweck, C)

### PSYCH 16N. Amines and Affect

Stanford Introductory Seminar. Preference to freshmen. How serotonin, dopamine, and norepinephrine influence people's emotional lives. GER:DB-SocSci

3 units, Spr (Knutson, B)

**PSYCH 18N. Early Social Cognitive Development**

Preference to freshmen. Focus is on the development of attachment and its impact on psychological functioning. GER:DB-SocSci

*3 units, not given this year*

**PSYCH 23N. Aping: Imitation, Control, and the Development of the Human Mind**

Stanford Introductory Seminar. Preference to freshmen. The idea that a childhood that prolongs a state of stimulus-bound helplessness beyond that of animals is the price human beings pay for the benefits of shared cognitive structures. How such structures enable social collaboration, language, and the transmission and sharing of knowledge. Sources include psychological data from animals and humans, and recent discoveries in neuroscience.

*3 units, Spr (Ramscar, M)*

**PSYCH 25N. Psychology, Inequality, and the American Dream**

Stanford Introductory Seminar. Preference to freshmen. What role do psychological factors play in perpetrating inequality despite legal prohibitions? How can psychologically wise reforms promote equal opportunity? Topics include school achievement, prejudice and discrimination, social class, and race/ethnicity.

*3 units, Aut (Walton, G)*

**PSYCH 30. Introduction to Perception**

Behavioral and neural aspects of perception focusing on visual and auditory perception. Topics include: scientific methods for studying perception, anatomy and physiology of the visual and auditory systems, color vision, depth perception, motion perception, stereopsis, visual recognition, pitch and loudness perception, speech perception, and reorganization of the visual system in the blind. GER:DB-NatSci

*3 units, Aut (Grill-Spector, K)*

**PSYCH 45. Introduction to Learning and Memory**

The literature on learning and memory including cognitive and neural organization of memory, mechanisms of remembering and forgetting, and why people sometimes falsely remember events that never happened. Cognitive theory and behavioral evidence integrated with data from patient studies and functional brain imaging. Recommended: 1.

*3 units, Spr (Wagner, A)*

**PSYCH 50. Introduction to Cognitive Neuroscience**

(Same as SYMBSYS 50.) Topics in human neuropsychology. The functional organization of the human nervous system and of brain imaging techniques (MRI, PET). 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 GER:DB-NatSci

*4 units, Win (McClure, S)*

**PSYCH 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:DB-SocSci

*3 units, Aut (Johnson, S)*

**PSYCH 60A. Introduction to Developmental Psychology Section**

Guided observation of children age 2-6 at Bing Nursery School. Corequisite: 60.

*2 units, Aut (Lomangino, A)*

**PSYCH 70. Introduction to Social Psychology**

Topics related to the influence of other people on individuals' thoughts, emotions, and behaviors. Factors that affect the way that we perceive ourselves and others; how people influence others; how persuasion happens; what causes us to like, love, help, or hurt others; and how social psychology helps to understand questions about law, business, and health. GER:DB-SocSci

*4 units, Spr (Tormala, T)*

**PSYCH 75. Introduction to Cultural Psychology**

The cultural sources of diversity in thinking, emotion, motivation, self, personality, morality, development, and psychopathology. Recommended: 1. WIM GER:DB-SocSci. EC-GlobalCom

*5 units, alternate years, not given this year*

**PSYCH 80. Introduction to Personality Psychology**

Current empirical and theoretical approaches to personality. How and why do people differ? Does personality change over time? Can people change their personalities? What makes people happy? What are the physical, mental, and social consequences of personalities? Prerequisite: 1. GER:DB-SocSci

*3 units, Spr (Tsai, J)*

**PSYCH 90. Introduction to Clinical Psychology**

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, issues in, and the role of clinical psychology in contemporary society. Recommended: 1. GER:DB-SocSci

*3 units, Aut (Haas, A)*

**PSYCH 95. Introduction to Abnormal Psychology**

Theories of and approaches to understanding the phenomenology, etiology, and treatment of psychological disorders among adults and children. Research findings and diagnostic issues. Recommended: PSYCH 1. GER:DB-SocSci. DB-SocSci

*3 units, not given this year*

**PSYCH 101. Community Health Psychology**

(Same as HUMBIO 128.) Social ecological perspective on health emphasizing how individual health behavior is shaped by social forces. Topics include: biobehavioral factors in health; health behavior change; community health promotion; and psychological aspects of illness, patient care, and chronic disease management. Prerequisites: HUMBIO 3B or PSYCH 1, or equivalent.

*4 units, Win (Heaney, C)*

**PSYCH 102. Longevity**

(Same as NENS 202.) Interdisciplinary. Challenges to and solutions for the young from increased human life expectancy: health care, financial markets, families, work, and politics. Guest lectures from engineers, economists, geneticists, and physiologists. GER:DB-SocSci

*3 units, Win (Rando, T; Carstensen, L)*

**PSYCH 104. Uniquely Human**

Are humans the only species that displays altruism, experiences uncertainty, and is capable of language and deception? Sources include empirical and theoretical papers in comparative psychology. Prerequisite: 1.

*3 units, Win (Hard, B)*

**PSYCH 110. Research Methods and Experimental Design**

Structured research exercises and design of an individual research project. Prerequisite: consent of instructor. GER:DB-SocSci

*5 units, not given this year*

**PSYCH 119. Psychology and Public Policy**

(Same as PUBLPOL 172.) Applications of psychology to public and social policy. Topics include the influence of psychological research and individual psychology on the creation of policy, and the influence of policy on attitudes and behavior at the personal and societal levels. How psychological theory can be used to shape policies and policy making in areas such as environment, education, criminal justice, and health.

*5 units, Win (Tormala, T)*

**PSYCH 119S. The Psychology of Stigma**

What obese people, African Americans, people with physical disabilities, lesbians, and Muslims have in common: social stigma. The social and psychological experiences of individuals living with social stigmas. Classic and current theory and research. Topics include: function, nature, and types of stigma; how stigmatized individuals view their identities and cope; mental and cognitive consequences; and interactions between stigmatized and non-stigmatized. Literature employing research methods including neuroimaging and social interaction studies.

*3 units, Sum (Jones, V)*

**PSYCH 120. Cellular Neuroscience: Cell Signaling and Behavior**

(Same as BIO 153.) Neural interactions underlying behavior. Prerequisites: PSYCH 1 or basic biology. GER:DB-NatSci

*4 units, not given this year*

**PSYCH 120S. Temptations and Self Control**

(Same as PSYCH 220S.) Why do people do things they come to regret, such as lack of exercise, angry words, overeating, unsafe sex, or dangerous driving? How can they minimize such behaviors? Sources include classical and current research from experimental psychology, neuroscience, behavioral economics, and neuroeconomics. Emphasis is on real-world applications.

*3 units, not given this year*

**PSYCH 121. Ion Transport and Intracellular Messengers**

(Same as PSYCH 228. 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 hands-on introduction to techniques such as patch clamping. Recommended: 120 or introductory course in biology or human biology.

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

**PSYCH 122S. Introduction to Cognitive and Comparative Neuroscience**

Evolutionary and ethological perspective on cognitive neuroscience and the neural systems underlying human thought. Classic research in cognitive neuroscience. How to analyze cutting-edge science. Sources include primary research articles. Topics include: basic neuroanatomy and neuroscientific techniques; perception, memory, and attention; language, social learning and communication; principles of evolution; learning and decision making. Final project. Prerequisites: high school biology or consent of instructor.

*3 units, Sum (Yoon, J; Chen, J; Hutchinson, J)*

**PSYCH 124S. Applying Psychology to Modern Life**

A scientific examination of everyday modern life. Topics include: how research on attention and memory can be applied to improve study strategies; how advertisers persuade and how their techniques can be resisted; how interpersonal conflicts can be avoided through knowledge of common errors in judging other people; and how studies on attraction and love can improve close relationships.

*3 units, Sum (Jordan, A; Chen, F)*

**PSYCH 125. Beyond Stereotype Threat: Claiming a Rightful Place in an Academic Community**

(Same as CTL 130.) Stereotype threat as mitigating the quality of a student's test performance; its impact on academic success at Stanford. How to reduce the impact of stereotype threat on Stanford students.

*3 units, Win (Glickman, A)*

**PSYCH 131. Language and Thought**

(Same as PSYCH 262.) 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 LINGUIST 1. GER:DB-SocSci

*4 units, Aut (Clark, H)*

**PSYCH 132. Introduction to Cognitive and Information Sciences**

(Same as LINGUIST 144, PHIL 190, SYMBSYS 100.) The history, foundations, and accomplishments of the cognitive sciences, including presentations by leading Stanford researchers in artificial intelligence, linguistics, philosophy, and psychology. Overview of the issues addressed in the Symbolic Systems major. GER:DB-SocSci

*4 units, Spr (Wasow, T; Roberts, E)*

**PSYCH 133. Human Cognitive Abilities**

(Same as EDUC 369.) Psychological theory and research on human cognitive abilities; their nature, development, and measurement; and their importance in society. Persistent controversies and new areas of research, recent perspectives on the nature-nurture debate and the roles of genetics, health and education in shaping HCAs. Prerequisite: PSYCH 1 or equivalent. (PSE) GER:DB-SocSci, DB-SocSci

*3 units, Win (Shavelson, R)*

**PSYCH 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, LINGUIST 1, or PHIL 181. GER:DB-SocSci

*3 units, Win (Clark, H)*

**PSYCH 137. Birds to Words: Cognition, Communication, and Language**

(Same as HUMBIO 145, PSYCH 239A.) Although the communicative abilities of animals are determined by their genetic endowment, and human communicative skills dwarf those of other species, the relation between language and genetics remains the subject of debate. Is human language genetically specified? Or are human communicative powers just one facet of human cognitive advantage? Focus is on the nature and origins of language, using evidence from studies of animals, children, and adults. GER:DB-SocSci

*4 units, Aut (Fernald, A; Ramscar, M)*

**PSYCH 138. Wise Interventions**

(Same as PSYCH 238.) Classic and contemporary psychological interventions; the role of psychological factors in social reforms for social problems involving healthcare, the workplace, education, intergroup, relations, and the law. Topics include theories of intervention, the role of laboratory research, evaluation, and social policy.

*4 units, Spr (Walton, G)*

**PSYCH 141. Cognitive Development**

How children's thinking and mental abilities change from infancy on. The major theories and explanations of intellectual growth. Sources include classic findings and state-of-the-art research on cognitive development. Prerequisite: 1. GER:DB-SocSci

*3 units, Aut (Markman, E)*

**PSYCH 143. Developmental Anomalies**

For advanced students. Developmental disorders and impairments. What the sparing of mental abilities in otherwise devastating disorders (or vice versa) tells about the mind and its development in the normal case. Examples of disorders and impairments: autism, congenital blindness, deafness, mental retardation, attachment disorder, and Williams syndrome. Limited enrollment. Prerequisite: consent of instructor. GER:DB-SocSci

*3 units, Spr (Johnson, S)*

**PSYCH 145. Seminar on Infant Development**

For students preparing honors research. Conceptual and methodological issues related to research on developmental psycholinguistics; training in experimental design; and collection, analysis, and interpretation of data.

*1-2 units, Spr (Fernald, A)*

**PSYCH 146. Observation of Children**

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. GER:DB-SocSci

*3-5 units, Win (Lomangino, A), Spr (Lomangino, A)*

**PSYCH 147. Development in Early Childhood**

Supervised experience with young children at Bing Nursery School. 3 units require 4 hours per week in Bing classrooms throughout the quarter; 4 units require 7 hours per week; 5 units require 10.5 hours per week. Seminar on developmental issues in the Bing teaching/learning environment. Recommended: 60 or 146, or consent of instructor.

*3-5 units, Aut (Winters, J; Chandra, P), Win (Winters, J;*

*Chandra, P), Spr (Winters, J; Chandra, P)*

**PSYCH 149. The Infant Mind: Cognitive Development over the First Year**

How do babies learn so much in so little time? Emphasis is on cognitive and perceptual development, and the relationship between brain and behavior in infancy. Prerequisite: 1. Recommended: 60 or 141. GER:DB-SocSci

*3 units, Spr (Hard, B)*

**PSYCH 152. Mediation for Dispute Resolution**

(Same as EDUC 131.) Mediation as more effective and less expensive than other forms of settling disputes such as violence, lawsuits, or arbitration. How mediation can be structured to maximize the chances for success. Simulated mediation sessions.

3 units, Aut (Massey, T)

**PSYCH 155. Introduction to Comparative Studies in Race and Ethnicity**

(Same as CSRE 196C, ENGLISH 172D, HISTORY 65, SOC 146.) How different disciplines approach topics and issues central to the study of ethnic and race relations in the U.S. and elsewhere. Lectures by senior faculty affiliated with CSRE. Discussions led by CSRE teaching fellows. GER:DB-SocSci, EC-AmerCul

5 units, given next year

**PSYCH 158. Emotions: History, Theories, and Research**

(Same as PSYCH 259.) Graduate students register for 259. 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, Win (Zajonc, R)

**PSYCH 161. Emotion**

(Same as PSYCH 261.) Graduate students register for 261.) 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. GER:DB-SocSci

3 units, Win (Gross, J)

**PSYCH 163. Interpersonal Basis of Abnormal Behavior**

The role of interpersonal problems and processes in producing forms of psychopathology including mild and severe disorders. Conventional empirical methods clarify the origin, nature, and treatment of emotional and personality disorders. Prerequisite: PSYCH 1. GER:DB-SocSci

3 units, Win (Horowitz, L)

**PSYCH 165. Peace Studies**

(Same as POLISCI 111.) Interdisciplinary. The challenges of pursuing peace in a world with many conflicts and rising regional, ethnic, and religious antagonisms. Historical, social, psychological, and moral perspectives. Contributions of academic disciplines to the study of peace. Students explore a conflict and offer contributions to the building of peace. Limited enrollment. GER:DB-SocSci

5 units, not given this year

**PSYCH 166. Seminar on Personal and Social Change**

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, not given this year

**PSYCH 167. Seminar on Aggression**

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, A)

**PSYCH 168. Emotion Regulation**

(Same as PSYCH 268.) Graduate students register for 268.) The scientific study of emotion regulation. Topics: historical antecedents, conceptual foundations, autonomic and neural bases, individual differences, developmental and cultural aspects, implications for psychological and physical health. Focus is on experimentally tractable ideas. GER:DB-SocSci

3 units, Spr (Gross, J)

**PSYCH 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; participation in ongoing data collection, analysis, and interpretation. Prerequisites: 1, research experience, and consent of instructor.

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

**PSYCH 179. The Psychology of Everyday Morality**

(Same as PSYCH 270.) Graduate students register for 270.) For graduate students, coterm, and senior Psychology majors. Traditional approaches focusing on how morality colors mundane human activities such as eating and on morality as defined by actors themselves rather than social scientists. Moral hypocrisy, food and disgust, taboo trade-offs, moral reproach, and prejudice with compunction. Limited enrollment. Prerequisite: 70 and consent of instructor.

4 units, not given this year

**PSYCH 180. Social Psychological Perspectives on Stereotyping and Prejudice**

(Same as PSYCH 245.) 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 domains including education, employment, politics, and law. Limited enrollment. GER:DB-SocSci

3 units, Spr (Eberhardt, J)

**PSYCH 180C. Asian American Sexualities**

(Same as ASNAMST 180C, CSRE 180C.) Seminar. Mutual constitution of culture and sexuality among Asian Americans; attitudes, behaviors, taboos, and identity. How masculinity and femininity are portrayed in the media; cultural attitudes toward homosexuality; and sexual politics. Social, political, and psychological implications.

5 units, not given this year

**PSYCH 183. Mind, Culture, and Society Labwork**

Required of and limited to research assistants in the mind, culture, and society lab. The development of analytical thinking with reference to how social identities such as race, class, gender, and culture affect psychological experiences across domains including education, law, business, and health.

2-3 units, Aut (Eberhardt, J), Win (Eberhardt, J), Spr (Eberhardt, J)

**PSYCH 186. The Psychology of Everyday Morality**

(Same as PSYCH 286.) Recent literature on morality from a social psychological perspective. Topics include moral judgment, moral intuitions, moral hypocrisy, moral identity, moralization, moral reproach, shame and guilt, temptations, and self-regulation. Contemporary psychological research emphasizing descriptive approaches (what people actually do) rather than normative ones (what one should do).

3 units, Win (Monin, B)

**PSYCH 189. Stanford Center on Longevity Practicum**

Student involvement in an interdisciplinary center aimed at changing the culture of human aging using science and technology.

3 units, Aut (Carstensen, L), Win (Carstensen, L), Spr (Carstensen, L), Sum (Carstensen, L)

**PSYCH 193. Special Laboratory Research**

May be repeated for credit. Prerequisites: 1, 10, and consent of instructor.

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

**PSYCH 194. Reading and Special Work**

Independent study. May be repeated for credit. Prerequisite: consent of instructor.

1-3 units, Aut (Staff), Win (Staff), Spr (Staff), Sum (Staff)

**PSYCH 195. Special Laboratory Projects**

Independent study. May be repeated for credit. Prerequisites: 1, 10, and consent of instructor.

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

**PSYCH 196. Contemporary Psychology: Overview of Theory, Research, Applications**

Capstone experience for juniors and seniors that bridges course work with research opportunities. Lectures representing the department's areas: social, personality, developmental, neuroscience, and cognitive psychology. Faculty present current research. Discussions led by advanced graduate students in the field represented by that week's guest. Students write research proposals. Small grants available to students to conduct a pilot study of their proposed research. Limited enrollment. Prerequisite: consent of instructor. GER:DB-SocSci

*3 units, Aut (Clark, H)*

**PSYCH 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 (Eberhardt, J)*

**PSYCH 198. Senior Honors Research**

Limited to students in the senior honors program. Finishing the research and data analysis, written thesis, and presentation at the Senior Honors Convention. May be repeated for credit.

*1-4 units, Win (Eberhardt, J), Spr (Eberhardt, J)*

**PSYCH 199. Temptations and Self Control**

(Same as PSYCH 299. Graduate students register for 299.) Why do people do things that they come to regret? How can people minimize behavior such as exercise avoidance, angry words, overeating, unsafe sex, and dangerous driving? Sources include classical and current research from experimental psychology, neuroscience, behavioral economics, and neuroeconomics. Real-world applications.

*2 units, not given this year*

**GRADUATE COURSES IN PSYCHOLOGY**

Primarily for graduate students; undergraduates may enroll with consent of instructor.

**PSYCH 192. Career and Personal Counseling**

(Same as EDUC 134, EDUC 234.) Methods of integrating career and personal counseling with clients and counselors from differing backgrounds. Practice with assessment instruments. Case studies of bicultural role conflict. Informal experience in counseling. (PSE)

*3 units, not given this year*

**PSYCH 201. Social Psychology Lecture Series**

Required of social psychology graduate students. Guest lecturers from Stanford and other institutions. May be repeated for credit.

*3 units, not given this year*

**PSYCH 202. Cognitive Neuroscience**

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

*3 units, Spr (McClure, S)*

**PSYCH 204A. Computational Neuroimaging**

Advanced seminar. For students working with functional magnetic resonance imaging (fMRI). The physiological basis of the signal measured using fMRI. Possibilities for experiment design and interpretation of the signal with respect to other physiological and behavioral measurements. Emphasis is on experimental design, software tools, and pulse sequences for fMRI experiments.

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

**PSYCH 204B. Computational Neuroimaging: Analysis Methods**

Neuroimaging methods with focus on data analysis techniques. Basic MR physics and BOLD signals. Methods for neuroimaging data using real and simulated data sets. Topics include: linearity of the fmri signal; time versus space resolution tradeoffs; noise in neuroimaging; correlation analysis; visualization methods; cortical reconstruction, inflation, and flattening; reverse engineering; can cognitive states be predicted from brain activation? Prerequisite: consent of instructor.

*1-3 units, alternate years, not given this year*

**PSYCH 205. Foundations of Cognition**

Topics: attention, memory, language, similarity and analogy, categories and concepts, learning, reasoning, and decision making. Emphasis is on processes that underlie the capacity to think and how these are implemented in the brain and modeled computationally. The nature of mental representations, language and thought, modular versus general purpose design, learning versus nativism. Prerequisite: 207 or consent of instructor.

*1-3 units, Win (Ramscar, M)*

**PSYCH 206. Cortical Plasticity: Perception and Memory**

Seminar. Topics related to cortical plasticity in perceptual and memory systems including neural bases of implicit memory, recognition memory, visual priming, and perceptual learning. Emphasis is on recent research with an interdisciplinary scope, including theory, behavioral findings, neural mechanisms, and computational models. May be repeated for credit. Recommended: 30, 45.

*1-3 units, Win (Grill-Spector, K; Wagner, A)*

**PSYCH 207. Professional Seminar for First-Year Ph.D.**

**Graduate Students**

Required of and limited to first-year Ph.D. students in Psychology. Major issues in contemporary psychology with historical backgrounds.

*2-3 units, Aut (Wandell, B)*

**PSYCH 208. Advanced Topics in Self-Defense**

Seminar. Threat to the self and how people deal with them. Readings from social psychological areas including social comparison, self-affirmation, self-completion, self-discrepancy, shame and guilt, terror management, dimensions of self-worth, self-regulation, self-presentation, psychophysiology, and moral identity. Enrollment limited to 15.

*1-3 units, not given this year*

**PSYCH 209. The Neural Basis of Cognition: A Parallel Distributed Processing Approach**

The neural basis of perception and attention; memory, learning, and semantic knowledge; language and reading; and action selection, planning, and problem solving. Findings from human behavioral experiments, neurophysiology, functional brain imaging, and the effects of brain disorders on performance; computational models that address these findings from the parallel distributed processing point of view which holds that brain representations are patterns of activity over widely dispersed populations of neurons, that mental processing involves coherent distributed engagement of neurons in these populations, and that learning occurs primarily through the adjustment of the strengths of the connections between the neurons. Corequisite: 209B.

*3 units, not given this year*

**PSYCH 209A. The Neural Basis of Cognition: A Parallel Distributed Processing Approach**

Models and data to support the notion that brain representations are patterns of activity over widely dispersed populations of neurons, that mental processing involves coherent distributed engagement of neurons in these populations, and that learning and development occur primarily through the adjustment of the strengths of the connections between the neurons. How models may be used to explain aspects of human cognition, development, and effects of brain damage on cognition. Prerequisites: linear algebra, differential equations, a programming course, and two courses in psychology or neuroscience.

*1-4 units, Win (McClelland, J)*



**PSYCH 209B. Applications of Parallel Distributed Processing Models to Cognition and Cognitive Neuroscience**

Research seminar. Builds on project proposal developed in 209A. Hands-on use of computational models to address phenomena in cognitive psychology and cognitive neuroscience. Classic and modern papers, and student presentations of their own projects. Final paper in the form of a journal article submission. Prerequisite: 209A.

4 units, Spr (McClelland, J)

**PSYCH 210. Foundations of Memory**

Memory and human cognition. Behavioral and neural data indicate that memory is not a unitary faculty but consists of multiple systems that support learning and remembering, each with its own processing characteristics and neurobiological substrates. What is known about memory emphasizing the cognitive and neural architectures of working, declarative, and nondeclarative memory. Recommended: 45.

3 units, alternate years, not given this year

**PSYCH 211. Developmental Psychology**

Prerequisite: 207 or consent of instructor.

1-3 units, Win (Markman, E; Dweck, C)

**PSYCH 212. Social Psychology**

Classic studies in experimental social psychology. Group and group dynamics; compliance and social pressure; conformity, cooperation, conflict, and social dilemmas; attraction and preference; attitudes and attitude change; social comparison, emotion, and affiliation; dissonance, consistency, and self-justification; attribution and self-perception; judgment and decision making, motivation, automaticity, and culture. Prerequisite: 207 or consent of instructor.

1-3 units, Win (Lepper, M)

**PSYCH 213. Personality and Psychopathology**

Historical trends, theoretical issues, and empirical approaches to the study of individual differences in personality and psychopathology. Topics include: trait approach for describing individual differences; its role in exploring such topics as the importance of the person by situation interaction; and psychometric themes and issues. Individual differences in motivation manifested in attachment styles in childhood and adulthood; stress, coping, health; self and self-regulation; and severe forms of psychopathology. Prerequisite: 207 or consent of instructor.

1-3 units, Spr (Horowitz, L)

**PSYCH 215. Mind, Culture, and Society**

Social psychology from the context of society and culture. The interdependence of psychological and sociocultural processes: how sociocultural factors shape psychological processes, and how psychological systems shape sociocultural systems. 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, and region of the country and the world. Prerequisite: 207 or consent of instructor.

3 units, not given this year

**PSYCH 216. Public Policy and Social Psychology: Implications and Applications**

(Same as IPS 207B, PUBLPOL 205B.) Theories, insights, and concerns of social psychology relevant to how people perceive issues, events, and each other, and links between beliefs and individual and collective behavior. Topics include: situationist and subjectivist traditions of applied and theoretical social psychology; social comparison, dissonance, and attribution theories; social identity, stereotyping, racism, and sources of intergroup conflict and misunderstanding; challenges to universality assumptions regarding human motivation, emotion, and perception of self and others; the problem of producing individual and collective changes in norms and behavior.

4 units, Spr (Ross, L)

**PSYCH 217. Topics and Methods Related to Culture and Emotion**

Preference to graduate students. How cultural factors shape emotion and other feeling states. Empirical and ethnographic literature, theories, and research on culture and emotion. Applications to clinical, educational, and occupational settings. Research in psychology, anthropology, and sociology. May be repeated for credit.

1-3 units, Win (Tsai, J)

**PSYCH 218. Early Social Cognitive Development**

Current literature on social and cognitive development in infancy emphasizing the interface between the two domains. May be repeated for credit. Prerequisite: consent of instructor.

1-3 units, Spr (Johnson, S)

**PSYCH 220. Topics in Cognitive Development**

Topics change each year. May be repeated for credit. Prerequisite: graduate standing in Psychology or consent of instructor.

1-3 units, Spr (Markman, E)

**PSYCH 220S. Temptations and Self Control**

(Same as PSYCH 120S.) Why do people do things they come to regret, such as lack of exercise, angry words, overeating, unsafe sex, or dangerous driving? How can they minimize such behaviors? Sources include classical and current research from experimental psychology, neuroscience, behavioral economics, and neuroeconomics. Emphasis is on real-world applications.

3 units, not given this year

**PSYCH 221. Applied Vision and Image Systems**

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, and color software architecture. Lab.

1-3 units, Win (Wandell, B)

**PSYCH 223. Social Norms**

(Same as OB 630.) Research and theory on the origins and function of social norms. Topics include the estimation of public opinion, the function of norms as ideals and standards of judgment, and the impact of norms on collective and individual behavior. How to identify and formulate tractable research questions.

4 units, Spr (Staff)

**PSYCH 226. Models and Mechanisms of Memory**

Current topics in memory as explored through computational models addressing experimental findings and physiological and behavioral investigations. Topics include: explicit and implicit learning; role of MTL structures in learning and memory; and single versus dual processes approaches to recognition. May be repeated for credit.

1-3 units, Aut (McClelland, J; Wagner, A)

**PSYCH 227. Seminar in Psycholinguistics**

(Same as LINGUIST 247.) May be repeated for credit.

2-4 units, not given this year

**PSYCH 228. Ion Transport and Intracellular Messengers**

(Same as PSYCH 121. 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 hands-on introduction to techniques such as patch clamping. Recommended: 120 or introductory course in biology or human biology.

1-3 units, Spr (Wine, J)

**PSYCH 232. Brain and Decision Making**

Neuroeconomics combines experimental techniques from neuroscience, psychology, and experimental economics, such as electrophysiology, fMRI, eye tracking, and behavioral studies, and models from computational neuroscience and economics. May be repeated for credit. Prerequisite: consent of instructor.

3 units, Spr (Knutson, B)

**PSYCH 233. MATLAB and Psychtoolbox for the Behavioral Sciences**

Topics such as experiment design, stimulus presentation, counterbalancing, response collection, data analysis, and plotting. Programming experiments. Final project programming a complete behavioral experiment relevant to student's research. Prerequisite: introductory programming such as CS 105 or 106, or consent of instructor.

*1-3 units, not given this year*

**PSYCH 234. Topics in Affective Disorders**

Current research topics including 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, given next year*

**PSYCH 236. The Social Self**

The psychological bases of complex social organization such as work teams and national and cultural identities. Topics include: the effect of social influence on perception, beliefs, attitudes, emotions, and behaviors; shared intentionality; and the relational bases of learning, motivation, and performance. Works of classic scholars (Asch, Lewin) and contemporary researchers in social, developmental, and comparative psychology. Prerequisite: graduate standing or consent of instructor.

*3 units, Win (Walton, G)*

**PSYCH 238. Wise Interventions**

(Same as PSYCH 138.) Classic and contemporary psychological interventions; the role of psychological factors in social reforms for social problems involving healthcare, the workplace, education, intergroup, relations, and the law. Topics include theories of intervention, the role of laboratory research, evaluation, and social policy.

*4 units, Spr (Walton, G)*

**PSYCH 239A. Birds to Words: Cognition, Communication, and Language**

(Same as HUMBIO 145, PSYCH 137.) Although the communicative abilities of animals are determined by their genetic endowment, and human communicative skills dwarf those of other species, the relation between language and genetics remains the subject of debate. Is human language genetically specified? Or are human communicative powers just one facet of human cognitive advantage? Focus is on the nature and origins of language, using evidence from studies of animals, children, and adults.

*4 units, Aut (Fernald, A; Ramscar, M)*

**PSYCH 243. General Development Seminar**

May be repeated for credit. Prerequisite: consent of instructors.

*1-2 units, Win (Markman, E; Fernald, A; Johnson, S)*

**PSYCH 244. Psychology of Aging**

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, not given this year*

**PSYCH 245. Social Psychological Perspectives on Stereotyping and Prejudice**

(Same as PSYCH 180.) 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 domains including education, employment, politics, and law. Limited enrollment.

*3 units, Spr (Eberhardt, J)*

**PSYCH 246. Cognitive and Neuroscience Friday Seminar**

Participant presentations. May be repeated for credit. Prerequisite: graduate standing in psychology or neuroscience program.

*1 unit, Aut (Boroditsky, L; Wagner, A), Win (Boroditsky, L; Wagner, A), Spr (Boroditsky, L; Wagner, A)*

**PSYCH 249. Human Motivation**

Current research and theory including questions concerning the nature of human motives, intrinsic motivation, self-regulation, the roles of affect and cognition, and lifespan and cultural influences on motivation. Prerequisite: 207 or consent of instructors.

*1-3 units, Spr (Dweck, C; Lepper, M)*

**PSYCH 250. High-level Vision**

Interdisciplinary focus on topics of high level vision from research in psychology, neuroscience and computer science. Theories, ongoing debates in the field, and recent empirical findings. Theories and models of object and face recognition. How is invariant object recognition accomplished? What are the neural mechanisms of object and face recognition? Are faces special? What is the role of experience in shaping object and face representations?

Recommended: 30

*1-3 units, Spr (Grill-Spector, K)*

**PSYCH 251. Affective Neuroscience**

Theory and research. Comparative and human research approaches map affective function to neuroanatomical and neurochemical substrates. Prerequisite: consent of instructor.

*3 units, not given this year*

**PSYCH 252. Statistical Methods for Behavioral and Social Sciences**

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.

*1-6 units, Aut (Thomas, E; Monin, B)*

**PSYCH 253. Statistical Theory, Models, and Methodology**

Practical and theoretical advanced data analytic techniques such as loglinear models, signal detection, meta-analysis, logistic regression, reliability theory, and factor analysis. Prerequisite: 252 or EDUC 257.

*3 units, Spr (Thomas, E)*

**PSYCH 257. Individually Supervised Practicum**

Satisfies INS requirements for curricular practical training. Relevant experience for graduate students as part of their program of study. May be repeated for credit. Prerequisites: graduate standing in Psychology, consent of adviser.

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

**PSYCH 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. (Zajonc)

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

**PSYCH 259. Emotions: History, Theories, and Research**

(Same as PSYCH 158.) Graduate students register for 259. 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, Win (Zajonc, R)*

**PSYCH 260. Reinforcement Learning in the Brain**

Recent advances in neural and behavioral models of reinforcement learning. Reinforcement learning models. Key findings in applying models to brain activity and behavior.

*2-3 units, Spr (Staff)*

**PSYCH 261. Emotion**

(Same as PSYCH 161. Graduate students register for 261.) 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, Win (Gross, J)*

**PSYCH 261A. Learning and Cognition in Activity**

(Same as EDUC 295.) Methods and results of research on learning, understanding, reasoning, problem solving, and remembering, as aspects of participation in social organized activity. Principles of coordination that support cognitive achievements and learning in activity settings in work and school environments.

*3 units, not given this year*

**PSYCH 262. Language and Thought**

(Same as PSYCH 131.) 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 LINGUIST 1.

*4 units, Aut (Clark, H)*

**PSYCH 266. Current Debates in Learning and Memory**

Memory is not a unitary faculty, but consists of multiple forms of learning and remembering. The cognitive and neural architectures of memory, focusing on the application of functional brain imaging (primarily fMRI and ERP). Recommended: 45

*1-3 units, not given this year*

**PSYCH 267. Human Memory: Facts, Fallacies, and Fragile Powers**

Seminar. Applications of memory concepts in everyday life and in social and clinical settings. Topics include personal identity, childhood amnesia, autobiographic memory, emotions and memory, memory distortions, illusions, self-serving biases, recovery of repressed memories, false memories, implicit memories, and unconscious influences on social behavior, with applications to psychopathology.

*1-3 units, not given this year*

**PSYCH 268. Emotion Regulation**

(Same as PSYCH 168. Graduate students register for 268.) The scientific study of emotion regulation. Topics: historical antecedents, conceptual foundations, autonomic and neural bases, individual differences, developmental and cultural aspects, implications for psychological and physical health. Focus is on experimentally tractable ideas.

*3 units, Spr (Gross, J)*

**PSYCH 269. Graduate Seminar in Personality Research**

May be repeated for credit. Prerequisite: graduate standing in Psychology. (Gotlib)

*1 unit, Aut (Gotlib, I), Win (Gotlib, I), Spr (Gotlib, I)*

**PSYCH 270. The Psychology of Everyday Morality**

(Same as PSYCH 179. Graduate students register for 270.) For graduate students, coterminals, and senior Psychology majors. Traditional approaches focusing on how morality colors mundane human activities such as eating and on morality as defined by actors themselves rather than social scientists. Moral hypocrisy, food and disgust, taboo trade-offs, moral reproach, and prejudice with compunction. Limited enrollment. Prerequisite: 70 and consent of instructor.

*4 units, not given this year*

**PSYCH 272. Special Topics in Psycholinguistics**

May be repeated for credit. Prerequisite: consent of instructor.

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

**PSYCH 273. Graduate Seminar on Language, Cognition, and Perception**

Current topics and debates. Readings from psychology, linguistics, neuroscience, ethology, anthropology, and philosophy. May be repeated for credit.

*3 units, not given this year*

**PSYCH 275. Graduate Research**

Intermediate-level research undertaken with members of departmental faculty. Prerequisite: consent of instructor.

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

**PSYCH 279. Topics in Cognitive Control**

The processes that enable flexible behavior by biasing contextually relevant perceptual, mnemonic, and response representations or processing pathways. Cognitive control is central to volitional action, allowing work with memory, task/goal states, and overriding inappropriate responses. Current models of cognitive control, functional neuroimaging, and neuropsychological evidence. Recommended: 45.

*1-3 units, not given this year*

**PSYCH 281. Practicum in Teaching**

Enrollment limited to teaching assistants in selected Psychology courses. May be repeated for credit.

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

**PSYCH 282. Practicum in Teaching PSYCH 1**

Logistical TA training including: preparing for sections; creating, correcting exams; grading an iterative writing assignment; office hours; review sessions; developing audiovisual expertise; communicating via coursework. Review of student evaluations with instructor to set goals and strategies. Second quarter focuses on pedagogical improvement. Limited to current PSYCH 1 TAs. May be repeated for credit.

*1-2 units, Aut (Gross, J), Win (Monin, B), Spr (Knutson, B)*

**PSYCH 283. International Conflict Resolution Colloquium**

(Same as POLISCI 403. Same as LAW 611.) Sponsored by the Stanford Center on International Conflict and Negotiation (SCICN). Conflict, negotiation, and dispute resolution with emphasis on conflicts and disputes with an international dimension, including conflicts involving states, peoples, and political factions such as the Middle East and Northern Ireland. Guest speakers. Issues including international law, psychology, and political science, economics, anthropology, and criminology.

*1 unit, Win (Weiner, A; Holloway, D; Ross, L)*

**PSYCH 286. The Psychology of Everyday Morality**

(Same as PSYCH 186.) Recent literature on morality from a social psychological perspective. Topics include moral judgment, moral intuitions, moral hypocrisy, moral identity, moralization, moral reproach, shame and guilt, temptations, and self-regulation. Contemporary psychological research emphasizing descriptive approaches (what people actually do) rather than normative ones (what one should do).

*3 units, Win (Monin, B)*

**PSYCH 290. Graduate Research Methods**

Primary tool use for psychologists: basics of experiment design; computer-based experiments; web-based experiments; data analysis packages and data presentation; exploratory statistics; eye-tracking methods; psychophysiology methods; survey construction; corpus and discourse analysis; and perhaps hypnosis. Prerequisite: Ph.D. student in Psychology.

*2 units, not given this year*

**PSYCH 291. Psychology Teaching Methods**

Open to graduate students and advanced undergraduates. Principles of good teaching. Students practice teaching skills.

*1-2 units, not given this year*

**PSYCH 297. Seminar for Coterminal Master of Arts**

Contemporary issues and student research. Student and faculty presentations.

*1-2 units, Aut (Clark, H), Win (Clark, H), Spr (Clark, H)*

**PSYCH 299. Temptations and Self Control**

(Same as PSYCH 199. Graduate students register for 299.) Why do people do things that they come to regret? How can people minimize behavior such as exercise avoidance, angry words, overeating, unsafe sex, and dangerous driving? Sources include classical and current research from experimental psychology, neuroscience, behavioral economics, and neuroeconomics. Real-world applications.

*2 units, not given this year*

**PSYCH 459. Frontiers in Interdisciplinary Biosciences**

(Same as BIO 459, BIOC 459, BIOE 459, CHEMENG 459, CHEM 459.) Students register through their affiliated department; otherwise register for CHEMENG 459. For specialists and non-specialists. Sponsored by the Stanford BioX Program. Three seminars per quarter address scientific and technical themes related to interdisciplinary approaches in bioengineering, medicine, and the chemical, physical, and biological sciences. Leading investigators from Stanford and the world present breakthroughs and endeavors that cut across core disciplines. Pre-seminars introduce basic concepts and background for non-experts. Registered students attend all pre-seminars; others welcome. See <http://biox.stanford.edu/courses/459.html>. Recommended: basic mathematics, biology, chemistry, and physics.

*1 unit, Aut, Win, Spr (Robertson, C)*