

# Psychology

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## Program of Study

The requirements of the B.A. in psychology, together with the department's broad range of course offerings, allow students to tailor programs to their own talents and goals. It may serve as preparation for graduate work in psychology or in related fields such as sociology, anthropology, linguistics, or the communication and information sciences. Psychology courses are also suitable for biological sciences concentrators interested in the relations between physiology, mind, and behavior, and for mathematics concentrators interested in the applications of quantitative methods. Those who foresee a profession in law, public health, urban planning, personnel management, social work, education, or journalism also find the program valuable. Psychology may interest students who are still focusing their goals and are considering the social sciences or a public service profession. Because research experience and contact with faculty are important requisites for professional development, students who plan a career in psychology are advised to contact a compatible faculty member by the end of their third year, with a view toward consultation and joint research.

## Concentration Requirements

*Fundamentals of Psychology (PSYC 2000).* It is recommended that this required course be the first psychology course students take. It will be offered during the Autumn Quarter of each academic year.

*Statistics/Methodology Sequence.* A coordinated two-quarter sequence covering statistical methods (PSYC 20100) and methodological issues (PSYC 20200) in psychology is taught Winter and spring quarters. Students may take STAT 22000 or a more advanced statistics course instead of PSYC 20100. This sequence would typically be taken in the junior year.

*Breadth Requirement.* Students are required to take three of the following five courses, each of which will be offered every year:

- Biological Psychology (PSYC 20300)
- Cognitive Psychology (PSYC 20400)
- Developmental Psychology (PSYC 20500)
- Social Psychology (PSYC 20600)
- Sensation and Perception (PSYC 20700)

*Additional Courses.* At least five additional courses (for a concentration total of eleven) must be chosen from among the courses offered by the Department of Psychology. For students pursuing honors in psychology, one of the elective courses should be an Honors Seminar (PSYC 29800), which is offered each winter. A maximum of three research courses can count

toward the eleven courses required of a psychology major. Research courses can be taken *P/F* but all other courses must be taken for a letter grade. NOTE: Before registering for an elective, students should confirm they have met any prerequisite for the course.

*Research Experience.* Required research experience can be obtained by working on a research project under the guidance of a faculty member or by taking a course with a research component other than the Methodology course. (A list of such courses is available in Br 109.)

*Calculus.* Concentrators are required to take two quarters of calculus as part of the College general education requirements.

### Summary of Requirements

<b>General Education</b>		MATH 13100-13200 or higher†
<b>Concentration</b>	1	PSYC 20000 (introductory survey)
	2	PSYC 20100 (or STAT 22000† or above), and PSYC 20200
	3	three courses chosen from the following five courses: PSYC 20300, 20400, 20500, 20600, or 20700
	$\frac{5}{11}$	electives* +

† Credit may be granted by examination.

\* A minimum of one of the five required additional psychology courses must have a research component. See "Research Experience" section.

+ Courses without a psychology number must be approved by the Curriculum Committee.

**Honors.** To qualify for honors in psychology, students must meet the following requirements: (1) Students must have a GPA of at least 3.0 overall, and a GPA of at least 3.5 in the concentration. (2) Students should arrange with a faculty sponsor to write an honors paper. Papers must represent a more substantial project than the average term paper. After the paper has been approved by the faculty sponsor, the paper must then be read and approved by a second faculty member. (3) Students are required to take an Honors Seminar (PSYC 29800) in Winter Quarter of their junior or senior year as one of the three possible research courses. It is expected that students will be actively working on the thesis project during the quarter they are taking the honors research seminar. (4) Students are required to present their findings in Spring Quarter of their senior year at a honors day celebration.

**Specialized Courses of Study.** Faculty members (or the undergraduate program chair) are available to help individual students design a specialized course of study within psychology. For example, particular course sequences within and outside of psychology may be designed for students who wish to pursue specializations in particular areas. These areas include, but are not limited to, cognitive neuroscience, language and communication, computational psychology, behavioral neuroscience and endocrinology, sensation and perception, and cultural psychology.

## Faculty

B. Bertenthal, R. D. Bock, A. Bookstein, N. M. Bradburn, .D. Bradley, R. A. Butler, J. Cacioppo, B. Cohler, M. Csikszentmihalyi, S. Duncan, S. Goldin-Meadow, W. Goldstein, S. Grossman, E. Hamp, L. Hedges, J. Huttenlocher, P. W. Jackson, L. Kay, B. Keysar, S. C. Levine, J. Levy, F. F. Lighthall, J. Lucy, V. Maljkovic, D. Margoliash, M. McClintock, D. McNeill, H. Moltz, H. Nusbaum, J. M. Pokorny, A. Rechtschaffen, T. Regier, M. J. Rosenberg, S. K. Shevell, R. A. Shweder, M. Silverstein, V. C. Smith, N. L. Stein, T. Trabasso, P. Visser, A. Woodward, B. D. Wright

## Courses

**2000. Fundamentals of Psychology.** This course is an introduction to the basic concepts and research in the study of behavior. Principal topics are sensation, perception, cognition, learning, motivation, and personality theories. *J. Cacioppo. Autumn.*

**20100. Psychological Statistics.** Psychological research typically involves the use of quantitative (statistical) methods. The purpose of this course is to introduce the methods of quantitative inquiry that are most commonly used in psychology and related social sciences. PSYC 20100 and 20200 form a two-quarter sequence that is conceived as an integrated introduction to psychological research methods. PSYC 20100 introduces explanatory data analysis, models in the quantitative psychology, concept of probability, elementary statistical methods for estimation and hypothesis testing, and sampling theory. PSYC 20200 builds on the foundation of PSYC 20100 and considers the logic of psychological inquiry and the analysis and criticism of psychological research. *L. Hedges. Winter.*

**20200. Psychological Research Methods.** *PQ: PSYC 20100 or STAT 22000, or consent of instructor.* This course is an introduction to the concepts and methods used in behavioral research. The major topics are the nature of behavioral research, testing of research ideas, quantitative and qualitative techniques of data collection, artifacts in behavioral research, analyzing and interpreting research data, and ethical considerations in research. *T. Trabasso. Spring.*

**20300/30300. Biological Psychology.** (=HUDV 21900/30400) What are the relations between mind and brain? How do brains regulate mental, behavioral, and hormonal processes; and how do these influence brain organization and activity? This course introduces the anatomy, physiology, and chemistry of the brain; their changes in response to the experiential and sociocultural environment; and their relation to perception, attention, behavioral action, motivation, and emotion. *L. Kay. Winter.*

**20400/30400. Cognitive Psychology.** Viewing the brain globally as an information processing or computational system has revolutionized the study and understanding of intelligence. This course introduces the theory, methods, and empirical results that underlie this approach to psychology. Topics include categorization, attention, memory, knowledge, language, and thought. *V. Maljkovic. Winter.*

**20500/30500. Developmental Psychology.** (=HUDV 25900/30700) This course is an introduction to developmental psychology that stresses the development and integration of cognitive, social, and perceptual skills. *Discussion section required. S. Levine, S. Hans. Autumn.*

**20600/30600. Social Psychology.** (=HUDV 26000) *PQ: PSYC 20000 recommended.* This course examines social psychological theory and research based on both classic and contemporary contributions. Among the major topics examined are conformity and deviance, the attitude-change process, social role and personality, social cognition, and political psychology. *N. Stein, T. Trabasso, Autumn; J. Cacioppo, Spring.*

**20700/30700. Sensation and Perception.** This course centers on visual and auditory phenomena. Aside from the basic sensory discriminations (i.e., acuity, brightness, loudness, color, pitch), more complex perceptual events (e.g., movement, space) are discussed. The biological underpinnings of these several phenomena are considered, as well as the role of learning in perception. *D. Bradley. Autumn.*

**20800. Psychology and the Law.** (=LLSO 22000) For course description, see Law, Letters, and Society. *M. Jenuwine. Winter.*

**21100. Perspectives on Close Interpersonal Relationships.** (=HUDV 28400) For course description, see Human Development. *C. Glover. Autumn.*

**21200. Love and Intimacy over the Life Course.** This course takes a life course view on love and intimacy. Students learn about how and why intimate relationships are formed, why relationships are maintained or dissolved, and explanations for the changes people go through at different life stages. The course also considers specific problems that occur in love and intimacy, such as conflict and violence, cultural and social variations in people's views on intimacy, and alternate intimate lifestyles, such as homosexuality and cohabitation. *N. Persun. Winter.*

**21400. The Psychology of Belief.** This course concerns, in a very general sense, the processes through which people form beliefs and the circumstances under which these processes work well or poorly. The course is intended to encourage broader thinking among participants about beliefs and how they are formed. It does not provide answers so much as suggest questions for further consideration. *W. Bennis. Spring.*

**21500. Sleep and Dreams.** This course provides essential knowledge about sleep and its functions, the rhythmic occurrence of sleep, dreams, sleep deprivation, and sleep disorders. In the first part of the course, students learn about the EEG correlates of sleep and sleep physiology. In the second part of the course, the main theories of dreaming are presented and discussed. In the last part of the course, the relationships between sleep, health, and mental health are reviewed with special emphasis on the impact of sleep deprivation on health, mood, and cognition. *F. Latta. Spring.*

**21900/32000. Color Vision.** *PQ: PSYC 20700/30700 or consent of instructor.* This course examines mechanisms and theories of color vision. Topics include the basic psychological mechanisms underlying color vision,

neural coding of color information and results from human psychological experiments that relate to quantitative descriptions and theories of color perception. *S. Shevell. Winter.*

**22500. Cognitive Development.** *PQ: Consent of instructor.* This course examines the intellectual development of the child. Topics include the growth of the child's understanding of the physical and social world, and the development of memory and thought processes. *J. Huttenlocher. Spring.*

**22600/32600. Speech Perception.** This course provides an introduction and overview of the basic research questions, theoretical issues, and empirical findings concerning the perception and comprehension of spoken language. *H. Nusbaum. Autumn.*

**23000/33000. Cultural Psychology.** (=HUDV 21000/31000) For course description, see Human Development. *R. Shweder. Autumn.*

**23100. Introduction to Developmental Neuropsychology.** This course focuses on research that examines the nature of developmental change by integrating information on the cognitive and neural levels of analysis. A broad range of approaches is considered, including studies of normal children, studies of children with focal brain damage and various learning disabilities, and studies that use modeling to simulate brain/behavior relations during development. *S. Levine. Winter.*

**23200. Language Development.** (=HUDV 23900/31600, LING 21600/31600) This course addresses the major issues involved in first-language acquisition. We deal with the child's production and perception of speech sounds (phonology), the acquisition of the lexicon (semantics), the comprehension and production of structured word combinations (syntax), and the ability to use language to communicate (pragmatics). *S. Goldin-Meadow, A. Woodward. Winter.*

**23500. Introduction to Interaction Research.** There have been three main interests in recent research on interaction: (1) the expression of emotion, (2) the process of interaction itself (how it is that participants are able to accomplish interactions), and (3) the use of behaviors observed in interaction as indices of the participants' enduring characteristics or transient states. Selected examples of these major types of research are considered in terms of their conceptual framework and their approach to studying the phenomenon in question. The discussion focuses on the nature of interaction and on approaches to studying it. *S. Duncan. Autumn.*

**23600. Introduction to Development in Infancy.** *PQ: PSYC 20000 or 22300, or consent of instructor.* In this course, we explore the development of human perceptual, cognitive, motor, and social abilities during the first two years of life. The study of infants provides a window into issues of nature and nurture, and the ways in which structure in the organism and structure in the environment converge in developing systems. We cover both classical and current models, giving special attention to the role of changing empirical methods in informing theory. *B. Bertenthal, A. Woodward. Autumn.*

**23900. Political Psychology.** This course explores the psychological processes that underlie political thought and behavior. Over the course of the semester, we review the contributions of social and cognitive psychology to the understanding of political judgments, decisions, and behavior. We consider a broad array of topics, including political socialization, the development and maintenance of belief systems and attitudes, the role of self-interest in political preferences, the role of values and the impact of value-conflict, political cognition and candidate appraisal, social identity and inter-group conflict, race and politics, the role of affect and emotion in political judgments and behavior, and the psychology of political atrocities. *P. Visser. Autumn.*

**24000. Systems Neuroscience.** (=BIOS 24205) *PQ: BIOS 24204 or 24236, or consent of instructor.* For course description, see Biological Sciences. *J. Ramirez, C. Ragsdale. Autumn. L.*

**24400. Observation of Child Behavior in Natural Settings.** (=HUDV 24400) For course description, see Human Development. *S. Stodolsky. Spring.*

**24600. Sexual Identity, Life Course, Life Story.** (=GNDR 20800/30800, HUDV 24600) For course description, see Human Development. *B. Cohler. Winter.*

**24900. Biopsychology of Attachment.** (=HUDV 23500/34900) For course description, see Human Development. *Winter.*

**25000/35000. Physiology of Vision.** *PQ: PHYS 12000s or higher; MATH 13000s or higher; and one of the following: PSYC 20700, BIOS 24204 or 24236, or consent of instructor.* This is an advanced course on primate visual physiology. Cortical systems for object recognition, visual motion perception, depth perception and heading (self-motion) perception are covered in detail. We also discuss basic components of visual computation, including frequency analysis, computational mapping, gain normalization and population coding. *D. Bradley. Spring.*

**25100. Decision Making and Communication.** We constantly have to make decisions in life, determine our preferences and choose among alternatives. Such decisions range in importance from ordering a meal at a restaurant to choosing what college to attend. How do we make such decisions? What are the rules that guide us? How optimal are the choices we make? This course focuses on individual and group decision making, and on how people communicate in the process of negotiating a joint outcome. *B. Keysar. Autumn.*

**25300. Social Context, Biology, and Health.** (=BPRO 23600) *PQ: Third- or fourth-year standing.* For course description, see Big Problems. *J. Cacioppo, M. McClintock, L. Waite. Not offered 2002-03.*

**25800. The Psychiatric Patient and the Life-World.** (=HUDV 25800, SOSOC 27900) *PQ: Consent of instructor.* For course description, see Human Development. *The course meets each Friday from 9 a.m. through late*

*afternoon, with the last two hours of the day reserved for discussion of the day's events and assigned reading. B. Cohler. Spring.*

**25900/35900. Language Learnability.** What does it mean to say that one kind of grammatical description makes language "learnable?" In this course, we offer answers to this question and many others by surveying recent literature on topics such as criteria for successful learning, criteria for a language class to be learnable, and criteria for a grammar class to be learnable. We see that much of the linguistics literature proves nothing correct about language learnability while saying a lot about it, and we discuss a new mechanism for learning natural language grammars by machine that is proven to "succeed" in a particular sense. *S. Fulop. Autumn.*

**26200/42200. Research Seminar in Research in Behavioral Endocrinology.** (=EVOL 42200, HUDV 42200) *PQ: Consent of instructor.* Ongoing research in the lab of Professor McClintock is discussed. *M. McClintock. Winter.*

**26400/36400. Theories of Emotion and the Psychology of Well-Being.** (=HUDV 23800/36400) This course reviews different approaches to the study of emotion and well-being, different ways of measuring well-being, the relationship between positive and negative well-being, and the degree to which well-being can be changed. We discuss studies that focus on the mechanisms that control psychological well-being. We also investigate those conditions that produce irrevocable changes in psychological well-being and those conditions that promote robustness. *N. Stein. Spring.*

**27000. Judgment and Decision Making.** This course provides an overview of topics related to the psychology of decision making and judgment. Specific topics are drawn from three broad areas: the ends that people pursue (e.g., happiness, meaning), the means with which people pursue them (e.g., processes of self-regulation, strategies of management and coping, planning, problem-solving, evaluation, choice), and limitations of deliberative decision making (e.g., lack of self-knowledge, unconscious or emotional processes that are difficult to control, external constraints). *W. Goldstein. Winter.*

**27400/37400. Psychology of Religion: Classic and Contemporary Contributions.** (=RLST 24400) *PQ: Consent of instructor.* In this seminar, four or five major works are closely examined with special attention to two questions: How do religious experience and belief coordinate with individual psychodynamic processes? How does religion serve in the psychological mediation of social change and the restoration of social stability? Among the works read are William James, *The Varieties of Religious Experience*; and Sigmund Freud, *The Future of an Illusion*. *M. Rosenberg. Autumn.*

**27600/37600. Language and Thought.** (=LING 27700/37700) This course explores philosophical, linguistic, psychological, and cognitive science views on language in thought and on thought in language. *D. McNeill. Winter.*

**27900. Self and Identity.** (=HUDV 27900) This course introduces research and theory related to psychological aspects of self and identity. Specific topics are drawn from the following broad areas: development of self (e.g., origins of selfhood), self-knowledge (e.g., organization of self-knowledge, motivational influences on self-knowledge), self and subjective experience

(e.g., esteem, self, emotion), self-regulation (e.g., processes of self-control, willpower), self and interpersonal processes (e.g., self-presentation, role models), and culture and self. *W. Goldstein. Spring.*

**28000/38000. Seminar: Memory and Learning.** This course examines the theoretical and methodological issues surrounding the cognitive processes of memory and learning. We read and discuss models of memory, different types and functions of memory, differences between the processes of learning and memory. Although the course focuses on current thinking in cognitive psychology and cognitive neuroscience, we consider the historical evolution of some of these positions and issues as well as the role of memory in other psychological phenomena. *H. Nusbaum. Spring.*

**28200/38200. Evolution of Mind and Morality: Nineteenth to Twenty-First Centuries.** (=CHSS 35900, HIPS 25901, HIST 25500/35500, PHIL 24300/34300) *PQ: Third- or fourth-year standing.* For course description, see History. *R. Richards. Winter.*

**28500/48500. Research Seminar in Social Neuroscience.** *PQ: Consent of instructor.* Ongoing research in the lab of Professor Cacioppo is discussed. *J. Cacioppo. Autumn, Winter, Spring.*

**28800/38800. Information Theory and Coding.** *PQ: Knowledge of basic mathematics.* This course introduces students to the mathematical theory of information with emphasis on coding, especially the development of efficient codes. Topics include an introduction to coding, quantification of information and its properties, Huffman codes, arithmetic codes, L to Z, and other adaptive coding techniques and applications. *A. Bookstein. Winter.*

**29200. Undergraduate Reading in Psychology.** *PQ: Students are required to submit the College Reading and Research Course Form. Available for either Pass or letter grading. This course may be taken for one or two quarters, depending on the size of the project. Autumn, Winter, Spring.*

**29700. Undergraduate Research in Psychology.** *PQ: Students are required to submit the College Reading and Research Course Form. Available for either Pass or letter grading. This course may be taken for one or two quarters, depending on the size of the project. Autumn, Winter, Spring.*

**29800. Honors Seminar.** *PQ: Open to students with third- or fourth-year standing who have begun their thesis project. Students who wish to pursue honors are required to take this honors seminar in Autumn or Winter Quarter of their senior year. This seminar counts as one of the three reading and research credits.* We read and discuss general papers on writing and research, and individual students present their own projects to the group. A literature review, data from ongoing or completed empirical projects, or portions of the thesis paper itself can be presented. Students are expected to give thoughtful feedback to others on their presentations and written work. *B. Keysar, Autumn; V. Maljkovic, Winter.*

**29900. Honors Paper Preparation in Psychology.** *PQ: Students are required to submit the College Reading and Research Course Form. Available for either Pass or letter grading. This course is not a requirement*



*for doing an honors paper. This course may be taken for one or two quarters, depending on the size of the project. Autumn, Winter, Spring.*

**31000. Perspectives in Drug Abuse.** (=PHAR 32900) This course provides a broad overview of the major classes of abused drugs (e.g., epidemiology, pharmacology, etiological factors, short- and long-term effects). *H. de Wit, L. Seiden, P. Vezina. Spring.*

**31100. Cellular Neurobiology.** (=BIOS 24204) *PQ: Completion of the general education requirement for the biological sciences.* For course description, see Biological Sciences. *D. Hanck, P. Lloyd. Spring. L.*

**31500. Neuroethology.** (=BIOS 24211, CPNS 30100) *PQ: BIOS 24204 or consent of instructor. Prior or concurrent registration in PHYS 14200. Prior knowledge of basic cellular mechanisms of neurons and basic anatomy of the vertebrate central nervous system.* For course description, see Biological Sciences. *Labs meet once a week and may require time beyond the posted schedule. D. Margoliash. Winter. L.*

**33500. Special Populations: Lessons for Developmental Psychology.** *PQ: PSYC 20500 and consent of instructor.* The study of special populations (e.g., children with early brain damage, deaf children, blind children, autistic children) is interesting in its own right. However, the focus of this course is on what we can learn about normal development from the study of special populations that might not be obvious apart from the study of these populations. Limitations on the kinds of inferences that can be made about normal development is also discussed. *S. Levine. Spring.*

**34100. Psychoneuroimmunology: Links between Nervous and Immune Systems.** (=BIOS 02370, BPRO 24200) *PQ: Third- or fourth-year standing, and BIOS 20180s or 20190s.* This course covers all aspects of neuroimmunoendocrinology at the molecular, cellular, and organismal and social levels. *M. McClintock, J. Quintans. Autumn.*

**34214. Cognitive Neuroscience.** (=BIOS 24214, CPNS 30200) *PQ: One year of college-level calculus and prior course in systems neuroscience.* For course description, see Biological Sciences. *N. Hatsopoulos. Spring. L.*

**34237. Biological Rhythms and Sleep.** (=BIOS 24237) *PQ: Completion of the general education requirement for the biological sciences, including a course in neuroscience.* For course description, see Biological Sciences. *E. Van Cauter. Winter.*

**34238. Scientific Approaches to Mental Illness.** (=BIOS 24238) *PQ: Completion of the general education requirement in biology. Prior course in neurobiology recommended.* For course description, see Biological Sciences. *P. Gejman, A. Sanders. Autumn.*

**34300. Early Socialization.** This course focuses on the relationship between the child's interaction with others and various aspects of socialization with an emphasis on natural interactions during the first two years. Among the topics considered are the process of interaction itself, the nature of the child's early interaction abilities, conflict, discipline, peer interaction, self-regulation, emotion, gender issues, moral development, and problematic

parent-child interaction. Research methods and conceptual foundations of readings are analyzed in class discussion. *S. Duncan. Winter.*

**34400. Computational Neuroscience III: Language.** (=BIOS 24223, ORGB 34600) *PQ: Consent of instructor.* For course description, see Biological Sciences. *T. Regier, Staff. Spring. L.*

**35100. Seminar on Complex Language and Thinking.** *PQ: Consent of instructor.* This seminar focuses on the ways in which children and adults acquire skill to understand, think about, and use complex forms of language. We examine the effects that culture has on the acquisition of complex language understanding in two contrasting domains: psychological and behavioral knowledge of people versus biological knowledge of people. *N. Stein. Winter.*

**36100. Category and Memory.** *J. Huttenlocher, L. Hedges. Winter.*

**36900. Theories of Mind and the Development of Goal-Directed Thinking.** This course focuses on the understanding that children and adults have of themselves and other people, especially internal states such as goals, plans, emotions, beliefs, and sensory states. We examine ways to clarify what children and adults know and what they do not know. Finally, we review situations where both adults and children make serious errors about their own and other people's theory of mind. *N. Stein. Spring.*

**37000-37100-37200. Institute for Mind and Biology Proseminar.** (=HUDV 38000-38100-38200) *Students register for each quarter but receive credit in spring after completing the three-quarter sequence. The seminar series meets three to four times a quarter. L. Kay, J. Cacioppo, D. Maestripieri, M. McClintock. Autumn, Winter, Spring.*

**37800. Evolutionary Social Psychology.** (=EVOL 37400, HUDV 37800) For course description, see Human Development. *J. Roney. Autumn.*

**38700. Connectionist Modeling: Techniques.** *PQ: Knowledge of programming, basic calculus, and linear algebra helpful.* The first in a two-quarter sequence, this course provides an introduction to the computational techniques underlying the field of connectionist modeling. Topics include the Hopfield nets, perceptrons, and recurrent layered networks, together with supervised and unsupervised training algorithms for such networks. *T. Regier. Winter.*

**39700-39800-39900. Topics in Experimental Social Psychology.** (=HUDV 39400-39500-39600) *Students register for each quarter but receive credit in spring after completing the three-quarter sequence.* This course is offered as a speaker series that discusses readings and issues in social psychology. *J. Cacioppo. Autumn, Winter, Spring.*