

Population Health and Reproduction

See **Veterinary Medicine, School of, on page 502.**

Precision Agriculture

(College of Agricultural and Environmental Sciences)
The Department of Biological and Agricultural Engineering offers a minor in Precision Agriculture, the latest farming concept that optimizes fertilizer, pesticide and water use, while minimizing environmental concerns.

Minor Program Requirements:

This minor acquaints students with recent developments and their applications to agriculture, in geographic information systems (GIS), global positioning systems (GPS), variable rate technologies (VRT), crop and soil sensors, and remote sensing. The minor prepares students for challenging positions in site-specific crop management as we enter the "information age" in agriculture.

UNITS

Precision Agriculture 20

Applied Biological Systems Technology 145, 175, 180 10
Select 10 or more units from Plant Sciences 120 or Statistics 100, Plant Sciences 110A or Plant Biology 112, Environmental and Resource Sciences 186, Soil Science 109 10

Minor Advisers. S.K. Upadhyaya, D.K. Giles

Preventive Veterinary Medicine

See **Veterinary Medicine, School of, on page 502.**

Psychiatry

See **Medicine, School of, on page 367.**

Psychology

(College of Letters and Science)

Keith F. Widaman, Ph.D., Chairperson of the Department

Department Office. 135 Young Hall
(530) 752-1880; <http://psychology.ucdavis.edu>

Faculty

Karen L. Bales, Ph.D., Assistant Professor
Shelley Blozis, Ph.D., Assistant Professor
John P. Capitano, Ph.D., Professor
Cameron S. Carter, M.D., Professor
(*Psychiatry and Behavioral Sciences*)
Rand Conger, Ph.D., Professor
David Corina, Ph.D., Professor
Richard G. Coss, Ph.D., Professor
Robert A. Emmons, Ph.D., Professor
Emilio Ferrer, Ph.D., Assistant Professor
Simona Ghetti, Ph.D., Assistant Professor
Gail S. Goodman, Ph.D., Professor

Katharine Graf Estes, Ph.D., Assistant Professor
Kevin Grimm, Ph.D., Assistant Professor
Gregory M. Herek, Ph.D., Professor
Petr Janata, Ph.D. Assistant Professor
Joel T. Johnson, Ph.D., Professor
Leah A. Krubitzer, Ph.D., Professor
Kristin Lagattuta, Ph.D., Assistant Professor
Debra L. Long, Ph.D., Professor

Academic Senate Distinguished Teaching Award
Steven Luck, Ph.D., Professor

George R. Mangun, Ph.D., Professor
Sally P. Mendoza, Ph.D., Professor
Research Faculty

Lisa Oakes, Ph.D., Professor
Donald H. Owings, Ph.D., Professor
Cynthia Pickett, Ph.D. Associate Professor
Robert B. Post, Ph.D., Professor
Charan Ranganath, Ph.D., Associate Professor
Susan Rivera, Ph.D., Assistant Professor
Richard W. Robins, Ph.D., Associate Professor
Jeffrey Schank, Ph.D., Associate Professor
Phillip R. Shaver, Ph.D., Professor
Jeffrey W. Sherman, Ph.D. Professor
Dean K. Simonton, Ph.D., Professor

UC Davis Prize for Teaching and Scholarly Achievement

Stanley Sue, Ph.D., Professor
UC Davis Prize for Teaching and Scholarly Achievement

Tamara Swaab, Ph.D., Associate Professor
Ross Thompson, Ph.D., Professor
Brian Trainor, Ph.D., Assistant Professor
Matthew Traxler, Ph.D., Associate Professor
David Whitney, Ph.D., Assistant Professor
Keith F. Widaman, Ph.D., Professor
Andrew P. Yonelinas, Ph.D., Professor
Nolan Zane, Ph.D., Professor

Emeriti Faculty

Linda P. Acredolo, Professor Emerita
Jarvis R. Bastian, Ph.D., Professor Emeritus
Alan C. Elms, Ph.D., Professor Emeritus
Karen P. Ericksen, Ph.D., Professor Emerita
Albert A. Harrison, Ph.D., Professor Emeritus
Kenneth R. Henry, Ph.D., Professor Emeritus
Neal E. A. Kroll, Ph.D., Professor Emeritus
Peter R. Marler, Ph.D., Professor Emeritus
William A. Mason, Ph.D., Professor Emeritus
G. Mitchell, Ph.D., Professor Emeritus
Robert M. Murphey, Ph.D., Professor Emeritus
Thomas Natsoulas, Ph.D., Professor Emeritus
Theodore E. Parks, Ph.D., Professor Emeritus
Robert Sommer, Ph.D., Professor Emeritus
Charles T. Tart, Ph.D., Professor Emeritus

Affiliated Faculty

Katherine Gibbs, Ph.D., Lecturer
Jacqueline Horn, Ph.D., Lecturer
Elizabeth Post, Ph.D., Lecturer
Joanna Scheib, Ph.D., Adjunct Assistant Professor
Eva Schepler, Ph.D. Lecturer

The Major Programs

The psychology program at UC Davis is broad and includes students and faculty with a variety of interests. The department has developed around five major areas of emphasis: Developmental Psychology, which involves the study of changes in behavior and abilities that occur as development proceeds and includes such topics as imaging the developing brain, development of self esteem, problem solving, attachment theory, symbolic representation in infants and children, development of children's understanding of mental states; Perception-Cognition, which involves the study of awareness and thought, and includes such topics as perception, learning, memory, and consciousness; Psychobiology, which involves the study of the biological correlates of behavior and includes such topics as physiological psychology, sensory processes, health psychology, and animal behavior; Social-Personality Psychology, which involves the study of the individual in his or her social environment and includes such topics as personality theory, abnormal psychology, individual differences, developmental psychology, and social psychology; and Quantitative which involves the

study of linear models and psychometrics which includes topics, such as experimental design and the analysis of variance, regression analysis, and multivariate analysis.

The department offers the Bachelor of Arts (A.B.) program for students interested in the liberal arts and the Bachelor of Science (B.S.) program geared for students with an interest in either biology or mathematics. The main objective of both programs is a broad introduction to the scope of contemporary psychology. In addition to completing a number of common core courses for their degree, students may take specialty courses on such far-ranging topics as sex differences, genius and creativity, environmental awareness, and organization psychology. The department strongly encourages students to become involved in individual research projects under the direction of faculty members and to participate in our internship program to broaden your experiences and understanding of the field of psychology.

Preparatory Requirements. Before declaring a major in psychology, students must complete the following courses with a combined grade point average of at least 2.500. All courses must be taken for a letter grade. (Students in the Bachelor of Science, Biology program must complete Biological Sciences 2A.):

Psychology 1, 41 8 units
Statistics 13 or 102 4 units
Biological Sciences 2A

or

Biological Sciences 10 and one course from Anthropology 1, Molecular and Cellular Biology 10, Neurobiology, Physiology, and Behavior 10 4 or 8 units
Sociology or cultural anthropology 4 units

Career Alternatives. A degree in psychology provides broad intellectual foundations which are useful to the graduate for the development of careers in a variety of areas, including social work, the ministry, teaching, business, and counseling. An undergraduate education in psychology also provides excellent preparation for graduate study. Individuals with degrees in psychology may enter graduate programs to prepare for teaching, research, or clinical/counseling careers in psychology, or may go on to professional schools for training in veterinary and human medicine, law, and other professions.

A.B. Major Requirements:

UNITS

Preparatory Subject Matter 20-25

Psychology 1 or the equivalent 4
Psychology 41 4
Statistics 13 or 102 4
Strongly recommended that Psychology 41 and Statistics 13 or 102 be completed in the first year.
Biological Sciences 2A; or a combination of Biological Sciences 10 and one course from Anthropology 1, Molecular and Cellular Biology 10, or Neurobiology, Physiology, and Behavior 10 4-8
One course in sociology or cultural anthropology; may be lower or upper division, minimum of 4 units 4-5

Depth Subject Matter 40

Two courses from two of the following four groups and one course from the remaining two groups 23-24
Group A: Psychology 100, 130, 131, 132, 135
Group B: Psychology 101, 113, 121, 122, 123, 126, 127, 129
Group C: Psychology 151, 152, 154, 161, 162, 168
Group D: Psychology 140; or Human Development 100A or 100B, Psychology 141/Human Development 101, Psychology 142/Human Development 102
Additional units to achieve a total of 40 upper division units in psychology 16-17
A maximum of 12 approved upper division Human Development units can be credited

Quarter Offered: I=Fall, II=Winter, III=Spring, IV=Summer; 2009-2010 offering in parentheses

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

toward satisfaction of the 40-unit requirement.

Total Units for the Major 60-65

Biology Emphasis

B.S. Major Requirements:

Preparatory Subject Matter..... 50-59

- Psychology 1 or the equivalent 4
- Psychology 41 4
- Statistics 13 or 102 4
- Strongly recommended that Psychology 41 and Statistics 13 or 102 be completed in the first year.
- Mathematics 16A-16B or 17A-17B or 21A-21B 6-8
- Physics 10 or 7A-7B 4-8
- Biological Sciences 2A, 2B 8
- Chemistry 2A, 2B 10
- Chemistry 8A-8B or 118A-118B or 128A-128B 6-8
- One course in sociology or cultural anthropology; may be lower or upper division, minimum of 4 units 4-5

Depth Subject Matter 49

- Seven Psychology courses distributed as specified:
- Group A: two courses from Psychology 100, 130, 131, 132, 135 8
- Group B: three courses from Psychology 101, 113, 121, 122, 123, 126, 127, 129 11-12
- Group C: one course from Psychology 151, 152, 154, 161, 162, 168 4
- Group D: one course from Psychology 140 (or Human Development 100A or 100B), Psychology 141/Human Development 101, Psychology 142/Human Development 102 4
- Additional units to achieve a total of 40 upper division units in psychology 12-13 (A maximum of 12 approved upper division Human Development units can be credited toward satisfaction of the 40-unit requirement.)
- Biological Sciences 101 4
- Neurobiology, Physiology, and Behavior 101 5

Total Units for the Major 99-108

Recommended

- Psychology 180B, 199; on a psychobiological topic, Anthropology 154A, Environmental Science and Policy 110, Evolution and Ecology 100, 101.

Mathematics Emphasis

B.S. Major Requirements:

Preparatory Subject Matter..... 44-59

- Psychology 1 or the equivalent 4
- Psychology 41 4
- Statistics 13 or 102 4
- Strongly recommended that Psychology 41 and Statistics 13 or 102 be completed in the first year.
- Mathematics 21A, 21B, 21C, 12
- Computer Science Engineering 30 or Computer Science Engineering 10 4
- Chemistry 10 or 2A-2B or 2AH-2BH.... 4-10
- Physics 10 or 7A-7B 4-8
- Biological Sciences 2A; or a combination of Biological Sciences 10 and one course from Anthropology 1, Molecular and Cellular Biology 10, or Neurobiology, Physiology, and Behavior 10 4-8
- One course in sociology or cultural anthropology; may be lower or upper division, minimum of 4 units 4-5

Depth Subject Matter 49

Five Psychology courses, distributed as specified:

- Group A: two courses from 100, 130, 131, 132, 135 8
- Group B: two courses from Psychology 101, 113, 121, 122, 123, 126, 127, 129 7-8
- Group C: one course from Psychology 151, 152, 154, 161, 162, 168
- or
- Group D: one course from Psychology 140 (or Human Development 100A or 100B), Psychology 141/Human Development 101, Psychology 142/Human Development 102 4
- Additional units to achieve a total of 40 upper division units in psychology 11-12
- A maximum of 12 approved upper division Human Development units can be credited toward satisfaction of the 40-unit requirement.
- Psychology 103A 5
- One course from Psychology 103B, 104, or the equivalent 4
- One course sequence from Statistics 106-108, 130A-130B, 131A-131B 8

Total Units for the Major 93-108

Recommended for All Majors. Students who plan to do graduate work in any area of psychology are strongly encouraged to complete Statistics 13 and Psychology 103A or both Statistics 13 and 102. Psychology 41 is a prerequisite for most upper division courses. Psychology 41 and Statistics 13 or 102 should be completed in the first year.

Major Advisers. K. Bales, S. Blozis, J.P. Capitanio, C.S. Carter, R. Conger, D. Corina, R.G. Coss, R.A. Emmons, E. Ferrer, S. Ghetti, G.S. Goodman, K. Graf Estes, K. Grimm, G.M. Herek, P. Janata, J.T. Johnson, L.A. Krubitzer, K. Lagattuta, D.L. Long, S. Luck, G.R. Mangun, L. Oakes, D.H. Owings, C. Pickett, R.B. Post, C. Ranganath, S. Rivera, R.W. Robins, P.R. Shaver, J. Sherman, D.K. Simonton, S. Sue, T. Swaab, R. Thompson, B. Trainor, M. Traxler, D. Whitney, K.F. Widaman, A.P. Yonelinas, N.W. Zane

Human Development course credit. Human Development 100A, 100B, 100C, 101, 102, 120, and 121 can be used toward satisfying the 40-unit upper division major requirement to a maximum of 12 units. Students who have completed Human Development 100A or 100B will receive 2 units of credit for Psychology 140.

Minor Program Requirements:

Psychology 24

- Psychology 1 or the equivalent 4
- One course from each of the following four groups 15-16
- Group A: Psychology 100, 130, 131, 132, 135
- Group B: Psychology 101, 113, 121, 122, 123, 126, 127, 129
- Group C: Psychology 151, 154, 162, 168
- Group D: Psychology 140, 141, 142
- Additional units to achieve a total of 20 upper division units 4-5
- One course selected from Human Development 100A, 100B, 100C, 101, 102, 120, 121 can be used toward satisfying the minor upper division unit requirement.

Honors and Honors Program. In order to be eligible for high or highest honors in Psychology, the student must both meet the college criteria and complete a research project involving a minimum of six units of course work over at least two quarters which represents an original analysis of data on psychological phenomena. Course 194HA-194HB or other approved courses can be used to satisfy the unit requirement. This project is to be written in thesis form and approved by the department. The quality of the thesis work will be the primary determinant for designating high or highest honors at graduation.

Graduate Study. The Department offers programs of study and research leading to the Ph.D. degree in psychology. Detailed information regarding graduate study may be obtained by writing the Graduate Adviser, Department of Psychology.

Graduate Adviser. See *Class Schedule and Registration Guide*.

Courses in Psychology (PSC)

Lower Division Courses

1. General Psychology (4)

Lecture—4 hours. Introduction emphasizing empirical approaches. Focus on perception, cognition, personality and social psychology, and biological aspects of behavior. Only 2 units of credit allowed for students who have completed course 15 or 16. Not open for credit to students who have completed course 15 and 16. GE credit: SocSci.—I, II, III. (I, II, III.) Shaver, Johnson, Capitanio, Thompson, Tavano-Hall, Traxler

20. Freshman Psychology Seminar (4)

Seminar—4 hours. Prerequisite: freshman standing. Instructor will acquaint students with his or her program of research, the development of scientific questions from the literature, and the application of research methods to examine these questions. Critical thinking will be encouraged via expository writing and brief presentations.

41. Research Methods in Psychology (4)

Lecture—3 hours; autotutorial. Prerequisite: course 1 or the equivalent; Statistics 13 or 102 recommended. Introduction to experimental design, interviews, questionnaires, field and observational methods, reliability, and statistical inference.—I, II, III. (I, II, III.) E. Post

415. Research Methods in Psychology (4)

Lecture/laboratory—10 hours; web virtual lecture—10 hours. Prerequisite: course 1 or equivalent. Introduction to experimental design, interviews, questionnaires, observational research, qualitative approaches, case studies, content analysis, sampling, descriptive statistics, and statistical inference. Limited enrollment. Not open for credit to students who have taken course 41.—IV.

90X. Lower Division Seminar (1-2)

Seminar—1-2 hours. Prerequisite: lower division standing and consent of instructor. Examination of a special topic in Psychology through shared readings, discussions, written assignments, or special activities such as fieldwork or laboratory work. May not be repeated for credit. Limited enrollment.

98. Directed Group Study (1-5)

Primarily for lower division students. (P/NP grading only.)

99. Special Study for Lower Division Students (1-5)

(P/NP grading only.)

Upper Division Courses

100. Introduction to Cognitive Psychology (4)

Lecture—4 hours. Prerequisite: courses 1 and 41. Introduction to human information processing, mental representation and transformation, imagery, attention, memory, language processing, concept formation, problem solving, and computer simulation. Not open for credit to students who have completed former course 136.—I, II, III. (I, II, III.) Gibbs, Kroll, Long, Luck

101. Introduction to Psychobiology (4)

Lecture—4 hours. Prerequisite: courses 1, 41. Survey and integration of the relationships between behavior and biological processes, including physiology, genes, development, ecology, and evolution.—I, II, III. (I, II, III.) Coss, Krubitzer, Owings, Schank, Trainor

103A. Statistical Analysis of Psychological Data (5)

Lecture—4 hours; laboratory—2 hours; term paper. Prerequisite: course 1, 41 and Statistics 13 or 102. Pass 1 open to Psychology majors. Design and statistical analysis of psychological investigations and the

interpretation of quantitative data in psychology. Not open for credit to students who have completed course 103.—I. (I.) Blozis, Grimm, Widaman

103B. Statistical Analysis of Psychological Data (4)

Lecture—4 hours. Prerequisite: course 103A and Statistics 13 or 102. Pass 1 open to Psychology majors. Probability theory, sampling distributions, hypothesis testing, statistical inference, one-way and two-way analysis of variance, nonparametric statistics, with applications in psychology. Not open for credit to students who have completed course 105.—II, III. (II, III.) Blozis, Ferrer, Grimm, Widaman

104. Applied Psychometrics: An Introduction to Measurement Theory (4)

Lecture—4 hours. Prerequisite: upper division standing in Psychology, courses 41 and 103, Statistics 13. Examination of the basic principles and applications of classical and modern test theory. Topics include test construction, reliability theory, validity theory, factor analysis and latent trait theory.—Grimm, Widaman

107. Questionnaire and Survey Research Methods (4)

Lecture/discussion—2 hours; laboratory/discussion—2 hours. Prerequisite: consent of instructor; course 1; course 41 or an equivalent course on social or behavioral research methods. Introduction to survey and questionnaire research methods with emphasis on how to ask questions. Social and psychological factors that influence survey response. Practical aspects of fielding survey and questionnaire research. Limited enrollment. Not offered every year.—Herek

109. Interactive Computer Programming for Psychological Experiments (4)

Lecture—2 hours; laboratory—3 hours. Prerequisite: course 41 and one of course 100, 130, or 132 and consent of instructor. Instruction in programming with an emphasis on programming desktop computers as an interactive research tool. Not open for credit to students who have completed course 181. (Former course 181.)

113. Developmental Psychobiology (4)

Lecture—3 hours; laboratory—2 hours. Prerequisite: course 101. The biology of behavioral development; survey and integration of the organismic and environmental processes that regulate the development of behavior.—I, II. (II, III.) Schank, Owings

120. Agent-Based Modeling (4)

Lecture/laboratory—4 hours. Prerequisite: course 100 or 101. Introduction to agent-based computer simulation and analysis with emphasis on learning how to model animals, including humans, to achieve insight into social and group behavior. Limited enrollment.—Schank

121. Physiological Psychology (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: courses 1, 41, 101. Pass 1 open to Psychology majors. Relationship of brain structure and function to behavior, motivation, emotion, language, and learning in humans and other animals. Methodology of physiological psychology and neuroscience. Not open for credit to students who have completed course 108. (Former course 108.)—I, II, III. (I, II, III.) Bales, Krubitzer

122. Advanced Animal Behavior (4)

Lecture—3 hours; laboratory—3 hours. Prerequisite: course 101 or Neurobiology, Physiology, and Behavior 102. Pass 1 open to Psychology majors. Advanced integrative survey of biological principles of behavioral organization, emphasizing historical roots, current research directions, conceptual issues and controversies. Laboratory exercises on the description and analysis of the behavior of captive and free living animals. (Same course as Neurobiology, Physiology, and Behavior 150.) Not open for credit to students who have completed course 150. (Former course 150.)—III. (III.) Owings, Scheib

123. Hormones and Behavior (3)

Lecture—3 hours. Prerequisite: Neurobiology, Physiology, and Behavior 101 or Neurobiology, Physiology, and Behavior 102. Pass

1 open to Psychology majors. Endocrine physiology with an emphasis on the principles of behavior. Fundamental relationships between hormones and various behaviors engaged in by the organism during its lifetime. Role of hormones in behavioral homeostasis, social behavior, reproductive behavior, parental behavior, adaptation to stress. (Same course as Neurobiology, Physiology, and Behavior 152.) Not open for credit to students who have completed course 152. (Former course 152.)—III. (III.) Bales

124. Comparative Neuroanatomy (4)

Lecture—3 hours; laboratory—2 hours. Prerequisite: course 101 or Neurobiology, Physiology, and Behavior 100 or 101. Overview of the neuroanatomy of the nervous system in a variety of mammalian and non-mammalian vertebrates. Examine changes or modifications to neural structures as a result of morphological or behavioral specializations. (Same course as Neurobiology, Physiology, and Behavior 124.)—II. (II.) Krubitzer, Recanzone

126. Health Psychology (4)

Lecture—4 hours. Prerequisite: course 1, 41, 101. Pass 1 open to Psychology majors only. Psychological factors influencing health and illness. Topics include stress and coping, personality and health, symptom perception and reporting, heart disease, cancer, compliance, and health maintenance and promotion. Not open for credit to students who have completed course 160.—II, III. (II, III.) Capitanio, Emmons

127. Animal Cognition (4)

Lecture—3 hours; term paper or discussion—1 hour. Prerequisite: courses 1, 41, 101. Pass 1 open to Psychology majors. Integrative review of the historical backdrop, theoretical issues, and scientific methods of studying animal cognition in a wide range of species. Emphasis on learning processes, pattern recognition, and the neurobiology of learning and memory. Not open for credit to students who have completed course 134. (Former course 134.)—II. (II.) Coss

128. Information Processing Models in Neuroscience and Psychology (4)

Lecture—3 hours; term paper. Prerequisite: Mathematics 16B, Physics 7B, course 101 or Neurobiology, Physiology, and Behavior 100. Pass 1 open to Psychology majors. Basic mathematical modeling techniques used in neuroscience and psychology. Specific topics include linear systems theory, Fourier transforms, neural networks, adaptive systems, probabilistic inference and information theory. Emphasis on understanding information processing in neural systems. (Same course as Neurobiology, Physiology, and Behavior 163.) Not open for credit to students who have completed course 163. (Former course 163.)—(II.) Olshausen

129. Sensory Processes (4)

Lecture—3 hours; term paper. Prerequisite: course 1, 41, 101. Pass 1 open to Psychology majors. Psychobiology of sensory systems in humans and other animals. The relationship of behavior to the physiology, structure, and function of the senses. GE credit: Wrt.—I, II, III. (I, II, III) Krubitzer

130. Human Learning and Memory (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: courses 1, 41, 100, and either Statistics 13 or 102; or consent of instructor. Consideration of major theories of human learning and memory with critical examination of relevant experimental data.—I, II, III. (I, II, III.) Ranganath, Yonelinas

131. Perception (4)

Lecture—3 hours; independent library work. Prerequisite: courses 1, 41. The cognitive organizations related to measurable physical energy changes mediated through sensory channels. The perception of objects, space, motion, events.—I, II, III. (I, II, III.) Post, Whitney

132. Language and Cognition (4)

Lecture—3 hours; term paper. Prerequisite: courses 1, 41, 100; or consent of instructor. Introduction to the cognitive processes involved in language comprehension and production. Topics include the bio-

logical foundations of language, speech perception, word recognition, syntax, reading ability, and pragmatics.—I, II, III. (II, III.) Long, Swaab, Traxler

135. Cognitive Neuroscience: The Biological Foundations of the Mind (4)

Lecture—3 hours; writing. Prerequisite: courses 1, 41, and 100 or 131, or consent of instructor; course 101, 121, or 129 recommended. Neuroscientific foundations of higher mental processes including attention, memory, language, higher-level perceptual and motor processes, and consciousness. Emphasis on the neural mechanisms which form the substrates of human cognition, and the relationship of mind to brain.—I, II. (I, II.) Janata, Mangun, Raganath

136. Psychology of Music (4)

Lecture/discussion—3 hours; term paper. Prerequisite: courses 1, 41, and either 100 or 131 or Music 6C; or consent of instructor. Introduction to the mental and neural representations of musical structures and processes involved in perceiving, remembering, and performing music. Music and emotion.—Janata

140. Developmental Psychology (4)

Lecture—4 hours. Prerequisite: courses 1, 41. Pass 1 open to Psychology majors. Ontogenetic account of human behavior through adolescence with emphasis on motor skills, mental abilities, motivation, and social interaction. Two units of credit allowed to students who have completed Human Development 100A or 100B. Not open for credit to students who have completed course 112. (Former course 112.)—I, II, III. (I, II, III.) Gheti, Gibbs, Goodman, Lagattuta, Oakes

141. Cognitive Development (4)

Lecture—3 hours; term paper. Prerequisite: Human Development 100A or 100B or course 140. Pass 1 restricted to Human Development or Psychology majors. Theories, methods, evidence, and debates in the field of cognitive development, such as nature/nurture, constraints on learning, and the role of plasticity. Topics include attention, memory, concepts about the physical and social world, and language. (Same course as Human Development 101.) GE credit: Wrt.—I, II, III. (I, II, III.) Chen, Gheti, Gibbs, Goodman, Graf Estes, Lagattuta, Rivera

142. Social and Personality Development (4)

Lecture—3 hours; term paper. Prerequisite: Human Development 100A or 100B or course 140. Pass 1 open to Human Development or Psychology majors. Social and personality development of children, infancy through adolescence. Topics include the development of personality, achievement motivation, self-understanding, sex-role identity, and antisocial behavior. Emphasis on the interface between biological and social factors. (Same course as Human Development 102.) GE credit: SocSci, Wrt.—I, II, III. (I, II, III.) Conger, Gibbs, Robins, Thompson

143. Infant Development (4)

Lecture—3 hours; lecture/discussion—1 hour; extensive writing. Prerequisite: courses 1 and 41, and either course 140 or Human Development 100A. Psychological development in infancy. Topics include physical and motor development, sensory and nervous system development, and memory and cognitive development. Emphasis will be on evaluating theories, empirical research, and experimental methods for understanding infant development.—II. (II.) Oakes

146. The Development of Memory (4)

Lecture—3 hours; term paper. Prerequisite: courses 1, 41. Pass 1 open to Psychology majors. Theory and research on memory development with focus on infancy and childhood. Not open for credit to students who have completed course 133. (Former course 133.)—II. (III.) Gheti, Goodman, Rivera

148. Developmental Disorders (4)

Lecture/discussion—3 hours; term paper. Prerequisite: courses 1, 41, and either 140 or 141 or Human Development 100A or 100B. Current scientific knowledge of the influences of biological, cognitive, and environmental factors on the emergence of disorders with onset in childhood. Examples include autism spectrum, ADD/ADHD, dyslexia and dyscal-

culia. Emphasis placed on understanding these disorders, their causes and their treatments.—II, III. Rivera

151. Social Psychology (4)

Lecture—4 hours. Prerequisite: courses 1, 41. Pass 1 open to Psychology majors. Behavior of the individual in the group. Examination of basic psychological processes in social situations, surveying various problems of social interaction; group tensions, norm-development, attitudes, values, public opinion, status. Not open for credit to students who have completed course 145. (Former course 145.)—I, II, III. (I, II, III.) Johnson, Pickett, Shaver, Sherman

152. Social Cognition (4)

Lecture—4 hours. Prerequisite: courses 1 and 41. Examines how social factors influence how we attend to, encode, and process information and how these mental processes affect subsequent judgments and behavior.—I, II, III. (I, II, III.) Johnson, Pickett, Sherman

153. Psychology and Law (4)

Prerequisite: courses 1, 41. Pass 1 open to Psychology majors. Current theoretical and empirical issues in the study of psychology and law. Topics include eyewitness testimony, child abuse, jury decision making, juvenile delinquency and criminology, prediction of violence, insanity defense, and memory for traumatic events. Not open for credit to students who have completed course 115. (Former course 115.) Offered in alternate years.—III. Goodman, Johnson

154. Psychology of Emotion (4)

Lecture—4 hours. Prerequisite: course 1, 41. Pass 1 open to Psychology majors. Introduction to current theories and research on emotion and bodily feelings with special reference to self-knowledge. Not open for credit to students who have completed course 143. (Former course 143.)—I, II, III. (I, II, III.) Robins, Shaver

155. Environmental Awareness (4)

Lecture—4 hours. Prerequisite: course 1. Pass 1 open to Psychology majors. Interactions of people and the environments they construct. Research methods for evaluating designed environments and reviews of current research in environmental psychology. Not open for credit to students who have completed course 144. (Former course 144.) GE credit: SocSci—I. (I.) Coss

157. Stereotyping, Prejudice, and Stigma (4)

Lecture/discussion—3 hours; term paper. Prerequisite: Psychiatry 151. Social psychological underpinnings of stereotyping, prejudice, and stigma from sociocultural, motivational, and cognitive perspectives. Topics include: origins, maintenance, change, effects on person perception and memory, and the automaticity/controllability of stereotyping and prejudice. Offered in alternate years.—Sherman

158. Sexual Orientation and Prejudice (4)

Lecture/discussion—4 hours. Prerequisite: course 1, 41. Pass 1 open to Psychology majors. Current scientific knowledge about sexual orientation and prejudice based on sexual orientation. Emphasis on learning the skills necessary for a critical understanding of science and public policy issues relevant to sexuality. GE credit: SocSci, Div, Wrt.—II. (III.) Herek

159. Gender and Human Reproduction (4)

Lecture—4 hours. Prerequisite: course 1 and 41. Pass 1 open to Psychology majors. Psychology of reproduction. Reproductive events over the course of an individual's life, including sexual development, mate choice, relationships, and reproduction. Biological and social psychological explanations at the levels of mechanism and evolutionary function. Not open for credit to students who have completed former course 149. (Formally course 149.)—I, II, III. Scheib

161. Psychology of the Self (4)

Lecture—4 hours. Prerequisite: courses 1 and 41. Psychological theory and research on the self. Topics include: self-knowledge, self-esteem, self-regulation,

self-presentation, cognitive and emotional aspects of the self, and the role of the self in shaping social interaction.—I, II, III. (I, II, III.) Pickett, Robins

162. Personality Theory (4)

Lecture—4 hours. Prerequisite: courses 1, 41. Pass 1 open to Psychology majors. The theories of Freud, Erikson, and other major twentieth-century contemporary approaches to personality. Not open for credit to students who have completed course 147. (Former course 147.) GE credit: SocSci, Wrt.—I, II, III. (I, II, III.) Emmons, Robins, Shaver

165. Introduction to Clinical Psychology (4)

Lecture—4 hours. Prerequisite: courses 1, 41, 168, and either 140 or 151. Major theoretical formulations in the history of clinical psychology, from classical psychoanalysis to contemporary existentialism and behavior modification. A survey, based on lectures, films, and tapes, of what clinical psychologists do, including methods of appraisal, professional roles, and approaches to treatment.—I, II, III. (I, II, III.) Horn, Sue, Zane

168. Abnormal Psychology (4)

Lecture—4 hours. Prerequisite: courses 1, 41. Descriptive and functional account of behavioral disorders, with primary consideration given to neurotic and psychotic behavior. GE credit: SocSci.—I, II, III. (I, II, III.) Emmons, Schepeler, Sue, Zane

170. Psychology of Religion (4)

Lecture—4 hours. Prerequisite: courses 1 and 41. Major theories, issues, data, and research methodologies of the psychology of religion. Religious experience and expression; religious development in childhood, adolescence, and adulthood; conversion; religious influences on physical and mental health; cross-cultural perspectives. GE credit: Div, Wrt.—II, III. (II, III.) Emmons

175. Genius, Creativity, and Leadership (4)

Lecture—3 hours; term paper. Prerequisite: course 1 and 41 or the equivalent or consent of instructor. The phenomenon of genius examined from a diversity of theoretical, methodological, and disciplinary perspectives, with an emphasis on outstanding creativity and leadership in art, music, literature, philosophy, science, war, and politics. GE credit: SocSci, Wrt.—I, III. (I, III.) Simonton

180A. Research in Cognitive and Perceptual Psychology (4)

Lecture—2 hours; laboratory—4 hours. Prerequisite: course 41, and four upper division Psychology courses and consent of instructor. Empirical research on selected topics in general experimental psychology (general research design and analysis, perception, cognition, cognitive development, etc.). Specific content will vary from quarter to quarter. May be repeated once for credit when content differs.—I, (II, III.)

180B. Research in Psychobiology (4)

Lecture—2 hours; laboratory—4 hours. Prerequisite: course 101, three additional upper division courses in Psychology, and consent of instructor. Empirical research on selected topics in psychobiology (animal learning, animal behavior, physiological and sensory psychology, developmental psychobiology, computer modeling of neural systems). Content varies. May be repeated once for credit when content differs.—III. (III.)

180C. Research in Personality and Social Psychology (4)

Lecture—2 hours; laboratory—4 hours. Prerequisite: course 41, and four upper division Psychology courses and consent of instructor. Empirical research on selected topics in personality and social psychology (personality, social psychology, organizational psychology, etc.). Content will vary from quarter to quarter. May be repeated once for credit when specific content differs.

185. History of Psychology (4)

Lecture—3 hours; term paper. Prerequisite: courses 1, 41, upper division standing or consent of instructor. Pass 1 open to Psychology majors. Development of psychological thought and research in context of history of philosophy and science. Not open for

credit to students who have completed course 120. (Former course 120.) GE credit: SocSci, Wrt.—II. (II.) Simonton

190. Seminar in Psychology (4)

Seminar—4 hours. Prerequisite: junior or senior standing; major in psychology or consent of instructor. Intensive treatment of a special topic or problem of psychological interest. May be repeated for credit in different subject area.—II, III. (II, III.)

190X. Upper Division Seminar (1-2)

Seminar—1-2 hours. Prerequisite: upper division standing and consent of instructor. In-depth examination at an upper division level of a special topic in Psychology. Emphasis on student participation in learning. May not be repeated for credit. Limited enrollment.

192. Fieldwork in Psychology (1-6)

Fieldwork—1-6 hours. Prerequisite: upper division standing in psychology and consent of instructor. Supervised internship off and on campus, in community and institutional settings. Maximum of four units may be used towards satisfaction of upper division major requirement. May be repeated once for credit. Limited enrollment (P/NP grading only.)

194HA-194HB. Special Study for Honors Students (3-3)

Independent study—9 hours. Prerequisite: senior standing in Psychology and qualifications for admission into college honors program, and consent of instructor; at least one course from 180A, 180B, 180C or 199 strongly recommended. Directed research. Supervised reading, research and writing leading to submission of a Senior Honors thesis under the direction of faculty sponsor. (Deferred grading only, pending completion of sequence.)

197T. Tutoring in Psychology (1-3)

Tutoring—1-3 hours. Prerequisite: upper division standing and consent of instructor. Intended for advanced undergraduate students who will lead discussion sections in Psychology courses. May be repeated for credit for a total of 8 units. (P/NP grading only.)

198. Directed Group Study (1-5)

Prerequisite: consent of instructor. (P/NP grading only.)

199. Special Study for Advanced Undergraduates (1-5)

(P/NP grading only.)

Graduate Courses

200. Proseminar in Psychology (3)

Seminar—2 hours; independent study—1 hour. Prerequisite: graduate standing in Psychology or consent of instructor. Introduces matriculating graduate students to research activities of departmental faculty. (S/U grading only.)—I. (I.)

201. Research Preceptorship (4)

Laboratory—3-4 hours; discussion—3-5 hours. Prerequisite: consent of instructor. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

202. Research Seminar (1)

Seminar—1 hour. Prerequisite: graduate standing in psychology. Presentation of graduate research to program faculty and graduate students. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

204A. Statistical Analysis of Psychological Experiments (4)

Lecture—4 hours. Prerequisite: Statistics 102 or the equivalent and graduate standing in Psychology or consent of instructor. Probability theory, sampling distributions, statistical inference, and hypothesis testing using standard parametric and correlational approaches. Analysis of variance, factorial and repeated measures, and tests of trends. Not open for credit to students who have completed course 206.—I. Ferrer, Widaman

204B. Causal Modeling of Correlational Data (4)

Lecture—4 hours. Prerequisite: course 204A or the equivalent or consent of instructor. Examination of how to make causal inferences from correlational

data in the behavioral sciences. Emphasis on testing rival causal models using correlations among observed variables. Beginning with multiple regression analysis, discussion advances to path analysis and related techniques.—II. Simonton

204C. Applied Psychometrics and Measurement Theory (4)

Lecture—4 hours. Prerequisite: course 204A or the equivalent or consent of instructor. Examination of the basic principles and applications of classical and modern test theory. Topics include test construction, reliability theory, validity theory, factor analysis, and latent trait theory. Not open for credit to students who have completed course 204. (Former course 204.) Offered in alternate years.—III. Widaman

204D. Advanced Statistical Inference from Psychological Experiments (4)

Lecture—4 hours. Prerequisite: course 204A or the equivalent or consent of instructor. Advanced topics in statistical inference, which may include probability theory, sampling distributions, statistical inference and hypothesis testing, nonparametric statistics, Bayesian approaches, and advanced issues in analysis of variance. Not open for credit to students who have completed course 205. (Former course 205.) Offered in alternate years.—III. Blozis

205A. Applied Multivariate Analysis of Psychological Data (4)

Lecture—4 hours. Prerequisite: three courses from 204A, 204B, 204C, 204D or the equivalents, or consent of instructor. Review of the major methods of multivariate data analysis for psychological data. Statistical routines using a linear algebra-based computing language. Topics include multivariate analysis of variance, discriminant analysis, canonical analysis factor analysis, and component analysis. Not open for credit to students who have completed course 207B. (Former course 207B.) Offered in alternate years.—II. Ferrer

205B. Factor Analysis (4)

Lecture—4 hours. Prerequisite: graduate standing, course 204A and 204B or the equivalent or consent of instructor. Theory and methods of factor analysis, including exploratory factor analysis, confirmatory factor analysis, and principal component analysis. Offered in alternate years.—II. Widaman

205C. Structural Equation Modeling (4)

Lecture—4 hours. Prerequisite: graduate standing, course 204A and 204B or the equivalent or consent of instructor. Theory and methods of structural equation modeling, including path analysis, confirmatory factor analysis, and multiple-group modeling. Offered in alternate years.—II. Ferrer, Grimm, Widaman

205D. Multilevel Models (4)

Lecture—4 hours. Prerequisite: course 204A, graduate standing or consent of instructor. Introduction to statistical techniques for the analysis of normal, hierarchically structured data, such as cross-sectional clustered data or repeated-measures data. Topics include hierarchical linear models, latent growth curve models, and how these methods handle unbalanced and/or missing data.—II. (II.) Blozis

207. Survey and Questionnaire Research Methods (4)

Lecture/discussion—4 hours. Prerequisite: completion of a course on social or behavioral research methods, graduate standing. Survey and questionnaire research methods with emphasis on how to ask questions. Cognitive, motivational, and social processes that influence how respondents answer questions; sampling techniques; Internet resources; practical aspects of fielding survey and questionnaire research. Not offered every year.—I. Herek

208. Physiological Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. A conceptual analysis of the contributions of neuroanatomy, neurophysiology and neurochemistry to an understanding of animal and human behavior.

209A. Introduction to Programming: Matlab (4)

Lecture/laboratory—3 hours. Prerequisite: graduate standing or consent of instructor. The Matlab programming environment as a means of organizing, analyzing, and visualizing scientific data. Basic programming concepts such as variables, loops, conditional branching, and efficient programming techniques will be emphasized. Not offered every year.—Janata

210. Fundamentals of Cognitive Neuroimaging (3)

Lecture/discussion—3 hours. Prerequisite: basic knowledge of inferential statistics and experimental psychology. Introduction to empirical foundations and methodology of neuroimaging, emphasizing pragmatics of functional magnetic resonance imaging (fMRI) to study cognition. Topics include MR physics, the relationship between neural activity and the BOLD response, experimental design, and analysis of fMRI data. Ranganath

211. Advanced Topics in Neuroimaging (2)

Seminar—2 hours. Prerequisite: Psychology 210 or consent of instructor. Critical presentation and discussion of the most influential advanced issues in neuroimaging, emphasizing fMRI design/analysis and the integration of fMRI with EEG/MEG. Limited enrollment. (Same course as Neurobiology, Physiology and Behavior 211 and Neuroscience 211.) (S/U grading only.)—II. (II.) Miller

212A. Developmental Psychology: Cognitive and Perceptual Development (4)

Seminar—4 hours. Prerequisite: graduate standing or consent of instructor, completion of undergraduate or graduate course on developmental psychology or human development. Theories and empirical findings concerning human cognitive and perceptual development. Development of perception, memory, concepts (e.g., theory of mind, concepts about number), problem solving, and language from infancy to adolescence.—II. Ghetti, Goodman, Graf Estes, Lagattuta, Rivera

212B. Developmental Psychology: Social, Emotional, and Personality Development (4)

Seminar—4 hours. Prerequisite: graduate standing or consent of instructor, completion of an undergraduate or graduate course on developmental psychology or human development. Theories and empirical findings concerning human social, emotional, and personality development. Development of emotions, moral reasoning and behavior, personality, self-concept, and social cognition from infancy to adolescence (may include adulthood).—Thompson

218A. Fundamentals of Animal Behavior (5)

Lecture/discussion—4 hours; discussion—1 hour. Prerequisite: consent of instructor; upper-division undergraduate introduction to the biology of behavior, such as course 101, 122, 123, Neurobiology, Physiology, and Behavior 102, 150, 152, Wildlife, Fish, and Conservation Biology 141, Entomology 104, or Animal Science 105. Survey of the phenomena and theory of animal behavior from the perspectives of multiple biological disciplines, including evolution, ecology, psychology, genetics, neurobiology, endocrinology, and animal science. (Same course as Animal Behavior 218A.)—I. (I.) Owings, Sih

218B. Fundamentals of Animal Behavior (5)

Lecture/discussion—4 hours; discussion—1 hour. Prerequisite: consent of instructor; course 209A. Survey of the phenomena and theory of animal behavior from the perspectives of multiple biological disciplines, including evolution, ecology, psychology, genetics, neurobiology, endocrinology, and animal science. (Same course as Animal Behavior 218B.)—II. (II.) Owings, Sih

220. History of Psychology (4)

Lecture—2 hours; seminar—2 hours. Prerequisite: graduate standing in psychology or consent of instructor. A lecture-seminar on the history of psy-

chology and on the applicability of early psychological theory and research to contemporary investigations. Offered in alternate years.—Simonton

230. Cognitive Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Analysis of the mental processes by which knowledge is acquired, manipulated, stored, retrieved and used. Offered in alternate years.—I. Long, Mangun

231. Sensation and Perception (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Analysis of the role of sensory processes and perception in experience and their effects on behavior. Offered in alternate years.—III. Post, Whitney

243. Social Cognition (4)

Lecture/discussion—3 hours, term paper. Prerequisite: consent of instructor. Processes underlying the perception, memory, and judgment of social stimuli, the effects of social and affective factors on cognition, and the interpersonal consequences of those processes. Topics include automaticity/control, motivated cognition, person perception, stereotyping, attitudes, and persuasion. Not offered every year. Pickett, Sherman

244. Stereotyping, Prejudice, and Stigma (4)

Lecture/discussion—3 hours, term paper. Prerequisite: consent of instructor. This course examines the social psychological underpinnings of stereotyping, prejudice, and stigma, including sociocultural, motivational, and cognitive factors. Not offered every year.—I, II, III. (I, II, III.) Herek, Sherman

245. Social Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and research in social psychology.—I. (III.) Johnson, Pickett, Robins

247. Personality (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and research in human personality.—II. (II.) Emmons, Robins

250. Comparative Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. The study of animal behavior in an evolutionary and comparative framework.—II. Owings

251. Topics in Genetic Correlates of Behavior (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and experiment in the genetic contributions to animal and human behavior. May be repeated for credit when topic differs. Offered in alternate years.

252. Topics in Psychobiology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Critical study in a selected area of psychobiology. May be repeated for credit when content differs. Offered in alternate years.—(I.)

261. Cognitive Neuroscience (4)

Lecture—3 hours; discussion—1 hour. Prerequisite: graduate student standing in Psychology or Neuroscience or consent of instructor. Graduate core course for neuroscience. Neurobiological bases of higher mental function including attention, memory, language. One of three in three-quarter sequence. (Same course as Neuroscience 223.)—III. (III.) Ranganath, Swaab

263. Topics in Cognitive Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Selected topics in language processing, memory, perception, problem solving, and thinking, with an emphasis on the common underlying cognitive processes. May be repeated for credit when content differs. Offered in alternate years.—(I.)

264. Topics in Psycholinguistics (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Discussion of fundamental issues in the psychology of language. May be repeated for credit when content differs. Offered in alternate years.

265. Topics in Psychology of Consciousness (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and research in the psychology of consciousness. May be repeated for credit when content differs. Offered in alternate years.

270. Topics in Personality and Social Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing or consent of instructor. Critical study of a selected area of personality or social psychology. May be repeated for credit when topic differs.—I. (I.)

272. Topics in Developmental Psychology (4)

Seminar—4 hours. Prerequisite: graduate standing in Psychology or consent of instructor. Selected topics in developmental psychology, including developmental neuroscience, memory development, infancy, cognitive development, social development, child maltreatment, children and law, perceptual development, emotional development, children at risk, and adolescence, with emphasis on developmental processes and developmental theory. May be repeated for credit. Not offered every year.

289A. Current Research in Psychology (2)

Seminar—2 hours. Prerequisite: graduate standing in Psychology or consent of instructor. Contemporary theory and empirical research in specialized topics in psychology. Topics include developmental attachment, social neuroscience, mental health, emotion, sexual orientation and identity. May be repeated for credit. (Deferred grading only, pending completion of sequence.)—I, II, III. (I, II, III.)

289B. Current Research in Psychology (2)

Discussion—2 hours. Prerequisite: course 289A; graduate standing in Psychology or consent of instructor. Intensive examination of contemporary theory and empirical research on a specialized topic in psychology. Sample topics include developmental attachment, social neuroscience, culture and mental health, electrophysiology and cognitive neuroscience, emotion, implicit cognitive processes, sexual orientation and identity, and attention. May be repeated for credit.—II, III. (II, III.)

290. Seminar (4)

Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Seminar devoted to a highly specific research topic in any area of basic psychology. Special topic selected for a quarter will vary depending on interests of instructor and students.—I, II, III. (I, II, III.)

298. Group Study (1-5)

(S/U grading only.)

299. Research (2-9)

(S/U grading only.)

299D. Dissertation Research (1-12)

Prerequisite: consent of instructor. (S/U grading only.)

Professional Courses**390A-390B. The Teaching of Psychology (6-4)**

Discussion, lecture, practice. Prerequisite: advanced graduate standing in psychology or a closely related discipline and consent of instructor. Methods and problems of teaching psychology at the undergraduate and graduate levels; curriculum design and evaluation. Practical experience in the preparation and presentation of material. (S/U grading only; deferred grading only, pending completion of sequence.)—II-III. (II-III.)

396. Teaching Assistant Training Practicum (1-4)

Prerequisite: graduate standing. May be repeated for credit. (S/U grading only.)—I, II, III. (I, II, III.)

Quantitative Biology and Bioinformatics

(College of Biological Sciences)

The interdisciplinary minor in Quantitative Biology and Bioinformatics is an integrative program that introduces students to the quantitative and computational approaches that are redefining all disciplines in the biological sciences, from molecular and cell biology, through genetics and physiology, to ecology and evolutionary biology. Students in this minor will learn research tools that apply mathematical and computational methods, increase their insight into the strengths and limitations of quantitative approaches, and develop the interdisciplinary perspective that is now the foundation of modern biological research and training.

The minor in Quantitative Biology and Bioinformatics is open to all undergraduates regardless of major and is sponsored by the College of Biological Sciences.

Minor Program Requirements:

UNITS

Quantitative Biology and Bioinformatics 18-24

Core Courses 8-12

Programming: Computer Science Engineering

10 or 30 or the equivalent* 4

Quantitative Biology: Biological Sciences

132 or Mathematics 124 4

Bioinformatics: Computer Science

Engineering 124 4

Quantitative and Computational

Preparation 4

Complete one course from the following:

Applied Science Engineering 115;

Computer Science Engineering 122;

Mathematics 128A, 128B, 128C, 135A;

Statistics 130A, 131A, 141A

Restricted Electives 6-8

Complete two or more courses from the

following list to achieve a total of 18-24

units: Biomedical Engineering 117, 141,

151; Biotechnology 150; Computer

Science Engineering 165A, 166; Evolution

and Ecology 102, 103, 104, 175;

Molecular and Cellular Biology 123, 143;

Neurobiology, Physiology, and Behavior

105, 163; one course from Environmental

Science and Policy 121 or Wildlife, Fish,

and Conservation Biology 122; one course

from Molecular and Cellular Biology 182

or Neurobiology, Physiology, and Behavior

131

Restrictions. No more than two upper division

courses from a single department may be offered in

satisfaction of the minor requirements. Only one

course used to satisfy a requirement for the minor

may be applied toward a student's major.

*The programming requirement may be

satisfied by previous experience and

therefore may not entail college course credit.

Please see your minor adviser for this

determination and its possible impact on your

unit requirements for the minor.

Minor Adviser. Consult the College of Biological

Sciences Dean's office in 202 Life Sciences, (530)

752-0410.

Radiation Oncology

See **Medicine, School of**, on page 367.

Radiology

See **Medicine, School of**, on page 367.

Range Science

(College of Agricultural and Environmental Sciences)

Faculty. See **Plant Sciences**, on page 448.

Related Program. See **Ecological Management and Restoration**, on page 208.

Related Courses. See Plant Sciences 101, 112, 130, 131, 134, 135; Nutrition 115; Soil Science 105, 120; Wildlife, Fish, and Conservation Biology 151.

Religious Studies

(College of Letters and Science)

Naomi Janowitz, Ph.D., Program Director

Program Office. 524 Sproul Hall
(530) 752-4999; <http://religions.ucdavis.edu>

Committee in Charge

Catherine Chin, Ph.D. (*Religion*)

Allison Coudert, Ph.D. (*History*)

Mark Elmore, Ph.D. (*Religious Studies*)

Naomi Janowitz, Ph.D. (*Religious Studies*)

Whalen Lai, Ph.D. (*Religious Studies*)

Jay Mechling, Ph.D. (*American Studies*)

Flagg Miller, Ph.D. (*Linguistic Anthropology*)

Brenda Schildgen, Ph.D. (*Comparative Literature*)

Baki Tezcan, Ph.D. (*Religious Studies, History*)

Archana Ventakesan, Ph.D. (*South Asia Studies*)

Keith Watenpaugh, Ph.D. (*History*)

Faculty

Catherine Chin, Ph.D., Assistant Professor

Allison Coudert, Ph.D., Professor

Mark Elmore, Ph.D., Assistant Professor

Naomi Janowitz, Ph.D., Professor

Whalen W. Lai, Ph.D., Professor

Flagg Miller, Ph.D., Assistant Professor

Baki Tezcan, Ph.D., Assistant Professor

Archana Ventakesan, Ph.D., Assistant Professor

Keith Watenpaugh, Ph.D., Associate Professor

Emeriti Faculty

Lincoln D. Hurst, Ph.D., Professor Emeritus

The Major Program

Majoring in religious studies provides an opportunity to explore and analyze, from an academic perspective, the written and oral traditions of diverse religions

The Program. The major introduces students to the

academic study of religion. The religious studies

major offers a broad choice of courses, including

history, philosophy, sociology, anthropology, American

studies, classics, and medieval studies. For some

students, religious studies is an appropriate second

major and might combine well with anything from

philosophy to international agricultural development,

from history to international relations.

Career Alternatives. The emphasis in religious

studies courses on developing analytical thinking

skills and clear written expression is an asset for

many career goals. As a strong liberal arts program,

the major can lead to research and/or teaching on

all levels in the field of religion. Because the major

integrates so many academic areas, it is also an

excellent background for graduate programs, especially

in the humanities, and for professional schools

including law, business, and foreign service.