Preventive Veterinary Medicine

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.

Preventive Veterinary Medicine
See Veterinary Medicine, School of, on page 581.

Psychiatry
See Medicine, School of, on page 427.

Psychology
(Conference of Colleges and Letters and Science)
Paul Hastings, Ph.D., Chairperson of the Department
Department Office. 135 Young Hall
530-752-1880; http://psychology.ucdavis.edu

Faculty
Karen L. Bates, Ph.D., Professor
Wielke Bleidorn, Ph.D., Assistant Professor
Shelley A. Bloxam, Ph.D., Associate Professor
Lindsay C. Bowman, Ph.D., Assistant Professor
Cameron S. Carter, M.D., Professor
(Psychotherapy and Behavioral Sciences)
David P. Corina, Ph.D., Professor (Linguistics)
Victoria L. Cross, Ph.D., Lecturer, PSOE
Paul W. Eastwick, Ph.D., Professor
Anne D. Ekstrom, Ph.D., Associate Professor
Robert A. Emmons, Ph.D., Professor
Emilio Ferrer-Caja, Ph.D., Professor
Maria Fernanda Ferreira, Ph.D., Professor
Joy Geng, Ph.D., Associate Professor
Simona Gheith, Ph.D., Professor
Gail S. Goodman, Ph.D., Professor
Katharine Graf Estes, Ph.D., Assistant Professor
Paul D. Hastings, Ph.D., Professor
John M. Henderson, Ph.D., Professor
Gregory M. Herek, Ph.D., Professor
Camelie E. Hostinar, Ph.D., Assistant Professor
Patt Janata, Ph.D., Professor
Leela A. Krubitzer, Ph.D., Professor
Kristin H. Lagattuta, Ph.D., Professor
Alison M. Ledgewood, Ph.D., Associate Professor
Debra A. Liga, Ph.D., Professor
Academic Senate Distinguished Teaching Award
Steven J. Luck, Ph.D., Professor
George R. Mangun, Ph.D., Distinguished Professor
Lisa M. Oakley, Ph.D., Professor
Cynthia Pickett, Ph.D., Associate Professor
Charan Ranganath, Ph.D., Professor
Philippa Rast, Ph.D., Associate Professor
Susan M. Rivera, Ph.D., Professor
Richard W. Robins, Ph.D., Professor
Jeffrey C. Schank, Ph.D., Professor
Eva Scheepens, Ph.D., Continuing Lecturer
Jeffrey W. Shipherd, Ph.D., Professor
Danielle S. Stolzenberg, Ph.D., Assistant Professor
Tamarra S. Swaab, Ph.D., Professor
Alan S. Thompson, Ph.D., Professor
Brian J. Witgen, Ph.D., Associate Professor
Matthew J. Trewavas, Ph.D., Professor
Simine Vazire, Ph.D., Associate Professor
Brian J. Witgen, Ph.D., Associate Professor
Andrea P. Yonelinas, Ph.D., Professor
Nolan W. Zane, Ph.D., Professor
Emeriti Faculty
Linda P. Acredolo, Professor Emerita
Jarvis R. Baslin, Ph.D., Professor Emeritus
Rand D. Conger, Ph.D., Professor Emeritus
(Developmental Psychology)
Richard G. Coles, Ph.D., Professor Emeritus
Alan C. Elms, Ph.D., Professor Emeritus
Karen P. Erickson, Ph.D., Professor Emerita
Albert A. Harrison, Ph.D., Professor Emeritus
Kenneth R. Henry, Ph.D., Professor Emeritus
Joel T. Johnson, Ph.D., Professor Emeritus
Neal E. Kroll, Ph.D., Professor Emeritus
William A. Mason, Ph.D., Professor Emeritus
Andrew M. Mendola, Ph.D., Professor Emeritus
G. Mitchell, Ph.D., Professor Emeritus
Robert M. Murphy, Ph.D., Professor Emeritus
Thomas Natsoulas, Ph.D., Professor Emeritus
Theodore E. Park, Ph.D., Professor Emeritus
Robert B. Post, Ph.D., Professor Emeritus
Phillip R. Shaver, Ph.D., Professor Emeritus
Dean K. Simonton, Ph.D., Distinguished Professor Emeritus
UC Davis Prize for Teaching and Scholarly Achievement
Robert Sommer, Ph.D., Professor Emeritus
Stanley Sue, Ph.D., Professor Emeritus
Charles T. Tart, Ph.D., Professor Emeritus
Affiliated Faculty
Eve A. Illich, Ph.D., Assistant Adjunct Professor
Joanna E. Scheib, Ph.D., Associate Adjunct Professor
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:
- Perception, Cognition, and Cognitive Neuroscience (PCCN) involves the study of sensory awareness and thought, and includes such topics as perception, learning, memory, language and cognition.
- Biological Psychology covers a broad spectrum of topics including evolutionary, neurobiological, and molecular mechanisms of behavior.
- Social-Personality Psychology involves the study of the individual in his or her social environment and includes such topics as personality and individual differences, emotions, stereotyping and prejudice, intergroup relations, the psychology of religion and psychological health and dysfunction.
- Developmental Psychology involves the study of changes in behavioral, cognitive, emotional, and social abilities that occur throughout the lifespan. Typical and atypical developmental processes are examined using a variety of methods including behavioral, neuroimaging, and physiological assessments.
- Quantitative Psychology involves the study of linear and nonlinear models, psychometrics, mixed-effects models, and multiple models, including experimental design, analysis of variance, regression, multivariate analysis, latent growth models, time series models, and factor analytic models.

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 for students interested in psychology, to name a few. 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 experience and understanding of the field of psychology.

Preparatory Requirements.
Before declaring a major in Psychology, students must complete the following two courses with a combined grade point average of at least 2.500. Both courses must be taken for a letter grade.

Psychology 1, 41 ....................... 8
If a 2.500 GPA is not attained in these two courses, a 2.000 GPA in a minimum of three upper division Psychology courses is also acceptable for major declaration.

Career Alternatives.
A degree in psychology provides broad intellectual foundations which can be useful to the graduate for the development of careers in a variety of areas, including social work, teaching, business management 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 many other professions.

A.B. Major Requirements:

Preparatory Subject Matter..............17-20
Psychology 1 or the equivalent.......... 4
Psychology 41.......................... 4
Statistics 13 or 100...................... 4
Strongly recommended that Psychology 41 and Statistics 13 or 100 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..................... 5 or 7-8

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 or 100Y, 130, 131, 132, 135, 136
Group B: Psychology 101, 113, 121, 122
Group C: Psychology 151, 152, 154, 158, 161, 162, 168
Group D: Psychology 140, (or Human Development 100A or 100B)*, Psychology 141

Preparatory Subject Matter..............53-61
Psychology 1 or the equivalent.......... 4

Total Units for the Major...............57-60

Biological Emphasis

B.S. Major Requirements:

Preparatory Subject Matter..............53-61
Psychology 1 or the equivalent.......... 4
Psychology 41 .......................................... 4
Statistics 13 or 100.................................... 4
Strongly recommended that Psychology 41
and Statistics 13 or 100 be completed in
the first year.
Mathematics 16A-16B or 17A-17B or 21A- 21B. 6-8
Physics 10 or 10C or 7A-7B.......................... 3-8
Biological Sciences 2A, 2B, 2C 15 Chemistry 2A, 2B, 2C 10
Chemistry 8A-8B or 118A-118B or 128A-128B. 6-8

Depth Subject Matter ................................ 49
Seven Psychology courses distributed as specified:
Group A: Two courses from: Psychology 100 or
100Y, 130, 131, 132, 135, 136.................. 8
Group B: Three courses from: Psychology
101, 113, 121, 122 (same course as
Neurobiology, Physiology, and Behavior
150), 123 (same course as Neurobiology,
Physiology, and Behavior 152), 124 (same
course as NPB 124), 125, 126, 137, 159.: 10-12
Group C: One course from: Psychology 151,
152, 154, 158, 161, 162, 168............. 4
Group D: One course from: Psychology 140
(or Human Development 100A or 100B*),
Psychology 141 (same course as Human
Development 101), Psychology 142 (same
course as Human Development 102), 143,
146, 148, 150, 152, 158.............. 8
Approved Electives.............................. 12-14
Additional units to achieve 40 upper division
units chosen from Psychology courses and/or
approved electives. See list of approved
electives below.
Biological Sciences 101.......................... 4
Neurobiology, Physiology, and
Behavior 101......................................... 4

Total Units for the Major ..................... 102-110

Recommended for All Majors. Students who
plan to do graduate work in any area of psychology
are strongly encouraged to gain experience through
research and internship activities.
Major Advisers. See staff advisers in 101 Young
Hall; psychology@ucdavis.edu
http://psychology.ucdavis.edu/undergraduate/advising
* Students who have completed Human
Development 100A or 100B prior to Psychology 140 will
receive 2 units of credit for Psychology 140.

Minor Program Requirements:

Psychology ........................................... 24
Psychology 41 [Please note that Psychology 1
is a prerequisite for Psychology 41 and all
upper division Psychology courses]........ 4
One course from each of the following four
groups........................................ 15-16
Group A: Psychology 100 or 100Y, 130, 131, 132, 135, 136
Group B: One course from: Psychology 140,
141, 142, 143, 146, 148
Group C: Psychology 151, 152, 154, 158, 161, 162, 168
Group D: Human Development 100A,
100B, Psychology 140, 141, Human
Development 101, 142/Human
Development 102, 143, 146, 148
Approved Electives......................... 4-5
Additional units to achieve 20 upper division
units chosen from Psychology courses and/or
approved electives. See list of approved
electives below.

Approved Electives:
Any Psychology courses inside or outside
Core Groups:

AAS 141—Psychology of African American
Experience........................................ 3
ANT 132—Psychological Anthropology....... 4
CHI 120—Chicana/o Psychology............... 4
CHI 121—Chicana/o Community Mental
Health............................................ 4
CHI 122—Psychological Perspectives on
Chicana/o and Latina/o Family............................ 4
CHI 123—Psychological Perspectives on
Chicana/o and Latina/o Family Children and
Adolescents........................................ 4
CMN 120—Interpersonal Communication.... 4
CMN 122—Nonverbal Communication........ 4
CNS 100—Consumer Behavior................ 3
EDU 110—Educational Psychology............. 4
EXB 102—Introduction to Motor Learning and
the Psychology of Exercise...................... 4
HDE 100A—Infancy and Early
Development..................................... 4
HDE 100B—Middle Childhood and
Adolescence....................................... 4
HDE 100C—Adulthood and Aging.............. 4
HDE 117—Longevity [Same course as ENT
117].................................................. 4
HDE 163—Cognitive Neuropsychology in
Adulthood and Aging............................. 4
LIN 171—Introduction to
Psycholinguistics.................................. 4
NPB 102—Animal Behavior.................... 3
NPB 168—Neurobiology of Addictive
Drugs............................................... 4
POI 170—Political Psychology................. 4
SOC 126—Social Interaction.................... 4
SOC 135—Social Relationships.................. 4
SOC 152—Juvenile Delinquency.................. 4
SOC 171—Social Inequality....................... 4

Honors and Honors Program. In order to
be eligible for high or highest honors in Psychology, the
student must both meet the college criteria for honors
and complete a research project involving a mini-
mum 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 writ-
ten 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 gradu-
ate study may be obtained from the website
Graduate Advisers. See http://
psychology.ucdavis.edu/graduate.

Courses in Psychology (PSC)
Lower Division
1. General Psychology (4)
Lecture—4 hours. Introduction emphasizing empiri-
cal approaches. Focus on perception, cognition, per-
sontality and social psychology, and biological
aspects of behavior. Only two units allowed to those
who have taken course 15 or 16; no credit allowed to
those who have taken both courses 15 and 16.
GE credit: SocSci SS—F, W, S. (F, W, S) Simon-
ton, Thompson, Traxler
12Y. Data Visualization in the Social
Sciences (4)
Lecture—2 hours; laboratory—1.5 hours; web vir-
tual lecture—1.5 hours. Introduction to quantitative
data across the social sciences (Communications,
Political Science, Psychology, Sociology, and other
disciplines). Transforming raw data into visual images,
producing graphs, visual reasoning, and interpreta-
tions. [Same course as Communications 12Y, Sociol-
ogy 12Y, Political Science 12Y] GE credit: QL,
VL—F, W, S. (F, W, S) Cross
20. Freshman Psychology Seminar (4)
Seminar—4 hours. Prerequisite: freshman standing.
Instructor will acquaint students with his or her pro-
gram of research, the development of scientific ques-
tions from the literature, and the application of
research methods to examine these questions. Criti-
cal thinking will be encouraged via expository writ-
ing and brief presentation.
41. Research Methods in Psychology (4)
Lecture—3 hours; extensive writing. Prerequisite:
course 1 or the equivalent; completion of Statistics
13 or 102 strongly recommended. Introduction to
experimental design, interviews, questionnaires,
field and observational methods, reliability, and sta-
tistical inference. GE credit: QL—F, W, S. (F, W, S) Cross,
Vazire
41S. Research Methods in Psychology (4)
Lecture/lab—10 hours; web virtual lecture—10
hours. Prerequisite: course 1 or equivalent. Class
size limited to 100 students. Introduction to experi-
mental design, interviews, questionnaires, observa-
tional research, qualitative approaches, case
studies, content analysis, sampling, descriptive statis-
90X. Lower Division Seminar (1-2)  Seminar—1.2 hours. Prerequisite: lower division standing; consent of instructor. Limited enrollment. 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. Offered irregularly.

98. Directed Group Study (1-5)  Primarily for lower division students. (P/NP grading)

99. Special Study for Lower Division Students (1-5)  (P/NP grading only)

Upper Division

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 to students who have completed former course 136. — F, W, S. (F, W, S.) Ekstrom, Ferreira, Henderson, Long, Luck

100Y. Introduction to Cognitive Psychology (4)  Web virtual lecture—4 hours; discussion—1 hour; lecture—1 hour. 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 or current course 100. — F, S, F, S Luck

101. Introduction to Biological Psychology (4)  Lecture—4 hours. Prerequisite: courses 1, 41. Pass One open to majors. Survey and integration of the relationships between behavior and biological processes, including physiology, genes, development, ecology, and evolution. Two units of credit for those students who have completed Neurobiology, Physiology and Behavior 100. — F, W, S. (F, W, S.) Krubitzer, Stolzenberg, Trainor

103A. Statistical Analysis of Psychological Data (5)  Lecture—3 hours; laboratory—2 hours; term paper. Prerequisite: course 1, 41 and Statistics 13 or 102. Pass One 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. GE credit: QL—F, W, F, W, J Blozis

103B. Statistical Analysis of Psychological Data (5)  Lecture—4 hours; laboratory—2 hours. Prerequisite: course 103A; Statistics 13 or 102. Pass One open to Psychology majors. Probability theory, sampling distributions, statistical inference, and hypothesis testing. Introduction to parametric and nonparametric approaches. Simple regression analysis, multiple regression analysis, non-parametric statistics, introduction to multivariate statistics, with applications in psychology. Not open for credit to students who have completed course 105. GE credit: QL—F, W, F, W J Blozis, Ferrer

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. Offered irregularly. GE credit: QL

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. Limited enrollment. Introduction to questionnaire research methods with emphasis on how to ask questions. Social and psychological factors that influence survey response. Practical aspects of fields and questionnaire research. Offered irregularly. GE credit: QL—Herek

113. Developmental Psychology (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. — F, W, S. (F, W, S.) Chank

120. Agent-Based Modeling (4)  Lecture/lab—4 hours. Prerequisite: course 100 or 101. Class size limited to 24 students. 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. GE credit: QL—S (S.) Schlam

121. Physiological Psychology (4)  Lecture—3 hours, laboratory—3 hours. Prerequisite: courses 1, 41, 101. Pass One open to Psychology majors. Relationship of brain structure and function to behavior, motivation, emotion, 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 109.— F, W, S. (F, W, S.) Bales, Krubitzer

122. Advanced Animal Behavior (4)  Lecture—3 hours; laboratory—3 hours. Prerequisite: course 101 or Neurobiology, Physiology, and Behavior 102. Pass One 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. Offered irregularly.

123. Hormones and Behavior (3)  Lecture—3 hours. Prerequisite: Neurobiology, Physiology, and Behavior 101 and either course 101 or Neurobiology, Physiology, and Behavior 102. Pass One open to Psychology majors. Endocrine physiology with an emphasis on the principles of behavior. Fundamental relationships between hormones and various behaviors in living organisms 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.— S, S. Bales, Trainor

124. Comparative Neuroanatomy (4)  Lecture—3 hours; laboratory—2 hours. Prerequisite: course 101 or Neurobiology, Physiology, and Behavior 101 or 102. Overview of the neuroanatomy of the nervous system in a variety of mammalian and non-mammalian species. Examination of changes or modifications to neural structures as a result of morphological or behavioral specializations. (Same course as Neurobiology, Physiology, and Behavior 124.) GE credit: SL—W, W (W) Krubitzer, Recanzone

125. Behavioral Epigenetics (4)  Lecture—4 hours. Prerequisite: course 101. Review of basic principles in genetics and epigenetics with emphasis on behavioral genetics and the use of modern molecular methods in understanding the complex relationships between genes, environment, and behavior. — W, S. (W, W, S.) Stolzenberg, Trainor

126. Health Psychology (4)  Lecture—4 hours. Prerequisite: course 1, 41, 101. Pass One 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 mental health treatment and promotion. Not open for credit to students who have completed former course 160. — W, S. (W, S.) Emmmons

130. Human Learning and Memory (4)  Lecture—3 hours, discussion—1 hour. Prerequisite: courses 1, 41 and 100 or 135. Cognitive organizations related to measurable physical energy changes mediated through sensory channels. Perception of objects, space, motion, events. — F, W, S. (F, W, S.) Ranganath, Yonelinas

131. Perception (4)  Lecture—3 hours; independent library work. Prerequisite: courses 1, 41 and 100 or 135. Cognitive organizations related to measurable physical energy changes mediated through sensory channels. Perception of objects, space, motion, events. — F, W, S. (F, W, S.) Ranganath, Yonelinas

132. Language and Cognition (4)  Lecture—3 hours, term paper. Prerequisite: courses 1, 41, and either 100 or 135. Not open for credit to students who have completed former course 130. Introduction to the cognitive processes involved in language comprehension and production. Topics include the biological foundations of language, speech perception, word reading, language acquisition, and pragmatics. GE credit: WE—F, W, S. (F, W, S.) Ferreira, Long, Swaab, Traxler

135. Cognitive Neuroscience: The Biological Foundations of Behavior (4)  Lecture—4 hours. Prerequisite: course 1, 41, 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. — F, W, S. (F, W, S.) Ekstrom, Estes, Janata, Ranganath

136. Psychology of Music (4)  Lecture/discussion—3 hours; term paper. Prerequisite: courses 1, 41, and either 100 or 135 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. GE credit: WE—F, (F.) Janata

140. Neurobiology of Learning & Memory (4)  Lecture—4 hours. Prerequisite: courses 1, 41, 101. Overview of the neural basis of learning and memory focusing on modern behavioral neuroscience research with animals. Topics include consolidation, neural plasticity, cellular competition for memory storage, and the role of neurogenesis in learning.— F, S, S, F. S. Wilgen

140. Developmental Psychology (4)  Lecture—4 hours. Prerequisite: courses 1, 41. Pass One open to Psychology majors. Ontogenetic account of human behavior through adolescence with emphasis on motor skills, mental abilities, motivation, and social interactions. 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.—F, W, S. (F, W, S.) Mather, Wiltgen, Goodman, Graf Estes, Lagattuta, Oakes

141. Cognitive Development (4)  Lecture—3 hours; term paper. Prerequisite: Human Development 100A or 100B or course 140. Pass One restricted to Human Development Psychology majors. Theories, methods, evidence, and debates in the field of cognitive development, such as nature/nurture, constraints on learning, and the role of plas ticity. Topics include attention, memory, concepts about the physical and social world, and language.
157. Stereotyping, Prejudice, and Stigma (4)  
Lecture/discussion—4 hours. Prerequisite: courses 1 and 141. Social psychological understandings of stereotyping, prejudice, and stigma from sociocultural, motivational, and cognitive perspectives. Topics include: origin, maintenance, change, effects on person perception and memory, and the automaticity/controllability of stereotyping and prejudice. GE credit: DD—W. (W.) Sherman

158. Sexual Orientation and Prejudice (4)  

159. Gender and Human Reproduction (4)  
Lecture—4 hours. Prerequisite: course 1, 41. Pass One 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)—S. (S.) Scheib

160. Psychology of the Self (4)  
Lecture—4 hours. Prerequisites: courses 1 and 41. Psychological theory and research on the self. Topics include: self-knowledge, self-esteem, self-regulation, self-presentation, family, society, and political aspects of the self, and the role of the self in shaping social interaction. —F. (F.) Pickett

162. Introduction to Personality Psychology (4)  
Lecture—3 hours; term paper. Prerequisite: course 1, 41. Pass One open to Psychology majors. Scientific study of personality. Methods of personality research. Overview of current research and theory in the field of personality psychology. Not open for credit to students who have completed former course 147. GE credit: SocSci, Writ | SS, WE. —F. (S.) Robins

165. Introduction to Clinical Psychology (4)  
Lecture—4 hours. Prerequisites: courses 1, 41, 168, and either 140 or 151. Major theoretical formulations in the history of clinical psychology, from classical psychanalytic to contemporary existentialism and behavioral therapy. Basic research, based on lectures, films, and tapes, of what clinical psychologists do, including methods of appraisal, professional roles, and approaches to treatment. —S. (S.) 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 | SS, W, —F. (F.) Wirt

170. Psychology of Religion (4)  
Lecture—4 hours. Prerequisites: 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, Writ | WE. —S. (S.) 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 understanding creativity and leadership in art, music, literature, philosophy, science, war, and politics. GE credit: SocSci, Writ | SS, WE. —F. (S.) F, (S.) Simonth

180A. Research in Cognitive and Perceptual Psychology (4)  
Lecture—2 hours; laboratory—4 hours. Prerequisite: course 110, and four upper division Psychology courses and consent of instructor. Empirical research on selected topics in general experimental psychology (perception, attention, memory, visual, auditory, sensory, perceptual, cognitive, and social-cognitive processes). Specific content will vary from quarter to quarter. May be repeated one time for credit when content differs. Offered irregularly.

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 variables. May be repeated one time for credit when content differs. Offered irregularly.

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 variables. May be repeated one quarter to quarter. May be repeated one time for credit when specific content differs. Offered irregularly.

185. History of Psychology (4)  
Lecture—3 hours; term paper. Prerequisite: courses 1, 41, upper division standing or consent of instructor. Past and present of the special topic or problem of psychological interest. May be repeated for credit in different subject area. —F. W, S. (F, W, S.)

190X. Upper Division Seminar (1-2)  
Seminar—1-2 hours. Prerequisite: upper division standing and consent of instructor. Intensive treatment of a special topic or problem of psychological interest. May be repeated for credit in different subject area. —F. W, S. (F. W. S.)

192. Fieldwork in Psychology (1-6)  
Fieldwork—1-6 hours. Prerequisite: upper division standing in psychology and consent of instructor. Limited enrollment. Supervised on-site 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 one time for credit. (P/NC grading only.)

194HA. Special Study for Honors Students (3)  
Independent study—9 hours. Prerequisite: senior standing in Psychology and qualifications for admission to 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.) GE credit. WE. —F. W, S. (F, W, S.)

194HB. Special Study for Honors Students (3)  
Independent study—9 hours. Prerequisite: senior standing in Psychology and qualifications for admission to 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.) GE credit: Variable. (F, W, S.)

1977. Tutoring in Psychology (1-3)
Tutoring—1.3 hours. Prerequisite: up-division standing and consent of instructor. Intended for advanced undergraduate students who will lead discussion. May be repeated for credit a total of 8 units. (P/NP grading only)—F, W, S. (F, W, S.)

198. Directed Group Study (1-5)
Seminar—1 hour. Prerequisite: consent of instructor. May be repeated for credit. (S/U grading only)—F, W, S. (F, W, S.)

199. Special Study for Advanced Undergraduates (1-5)
(P/NP grading only)—F, W, S. (F, W, S.)

Graduate

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)—F (F).

201. Research Preceptoryship (4)
Laboratory—3–4 hours; discussion—3–5 hours. Prerequisite: consent of instructor. May be repeated for credit. (S/U grading only)—F, W, S. (F, W, S.)

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)—F, W, S. (F, W, S.)

204A. Statistical Analysis of Psychological Experiments (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: Statistics 02 or equivalent standing in Psychology or consent of instructor. Probability theory, sampling distributions, statistical inference, and hypothesis testing using standard parametric and nonparametric procedures. Analysis of variance, factorial and repeated measures, and tests of trends. Not open for credit to students who have completed course 206A. —F. (F) Ferrer

204B. Causal Modeling of Correlational Data (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: course 204A or the equivalent and graduate standing in Psychology or consent of instructor. Examination of how to make causal inferences from correlational data in the behavioral sciences. Emphasis is on testing rival causal models using correlations among observed variables. Beginning with multiple regression, course develops analytic techniques to path analysis and related techniques. Not open for credit to students who have completed course 207A. —W. (W.) Simonon

204D. Advanced Statistical Inference from Psychological Experiments (5)
Lecture—4 hours; laboratory—2 hours. Prerequisite: course 204A or the equivalent or graduate standing in Psychology or consent of instructor. Advanced topics in statistics include maximum likelihood theory, sampling distributions, statistical inference and hypothesis testing, nonparametric statistics, Bayesian approaches, and advanced issues in analysis of variance. (F) Open for credit to students who have completed course 205. —S. (S) Blozis

205A. Applied Multivariate Analysis of Psychological Data (4)
Lecture—4 hours. Prerequisite: three courses from 204A, 204B, 204C, or equivalent. Review of the major methods of multivariate data analysis for psychological data. Statistical routines using linear algebra-based computing or analysis. Topics include multiple analysis of variance, discriminant analysis, canonical analy- sis factor analysis, and component analysis. Not open for credit to students who have completed course 207B. (Former course 207B.) Offered in alternate years. —W. (W.) Ferrer

205B. Factor Analysis (4)
Lecture—3 hours; term paper. Prerequisite: graduate standing, course 204A and 204B or equivalents or consent of instructor. Methods of factor analysis, including exploratory factor analysis, confirmatory factor analysis, and principal component analysis. Offered—W. (W.)

205C. Structural Equation Modeling (4)
Lecture—3 hours; term paper. 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 latent growth modeling and latent growth curve modeling. Offered in alternate years. —Ferrer

205D. Multilevel Models (4)
Lecture—4 hours. Prerequisite: course 204A or 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 modeling, latent growth curve models, and how these methods handle unbalanced and/or missing data. —W. (W.) Blazis

205E. Applied Psychometrics and Measurement Theory (4)
Lecture—4 hours. Prerequisite: course 204A or equivalent; graduate standing in Psychology or consent of instructor. Examination of the basic principles and applications of classical and modern test theory. Topics include test theory, reliability theory, validity theory, factor analysis, and latent trait theory. Not open for credit to students who have completed course 204 or 204C. Offered in alternate years. —S. (S)

205F. Item Response Theory (4)
Lecture—3 hours; term paper. Prerequisite: course 204A or the equivalent; graduate standing in Psychology or consent of instructor. Item response theory allows for the creation of precise measurement instruments in psychological testing. Review Classical Test Theory, and then cover basic IRT models through advanced applications. Offered in alternate years. —S. (S)

205G. Applied Longitudinal Data Analysis (4)
Lecture—3 hours; term paper. Prerequisite: course 204A and graduate standing in Psychology or consent of instructor. Modeling and understanding of intradividual change and interindividual differences in change. Reviews conventional methods and introduces contemporary techniques for modeling intradividual change. Offered in alternate years. —F. (F) Ferrer

206A. Theoretical Foundations: Research Methods in Psychology (4)
Lecture/discussion—3 hours; term paper. Restricted to graduate student status. Examines the philosophy and research practices underlying experimental psychology. Topics to be covered include philosophy of science/epistemology, research design, inference and bias in research, linear modeling, validity, the social context of research, and critical thinking about research. Offered irregularly. —S. (S) Pickett, Sherman

206B. Research Methods in Psychology: Applications in Social-Personality Research (4)
Lecture/discussion—3 hours; term paper. Restricted to graduate student status. Overview of the research designs, assessment methods, and statistical procedures used by social-personality psychologists. Focus on the practical issues that arise when using each method in specifying research contexts. Offered in alternate years. —W. (W.) Boszor

207. Survey and Questionnaire Research Methods (4)
Lecture/discussion—4 hours. Prerequisite: completion of a course in 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. Offered irregularly. —Herak

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. —S. Bales

208A. Fundamentals of Human Electrophysiology (4)
Lecture/discussion—1.5 hours; laboratory—3 hours; extensive problem solving—1.5 hours; project—3 hours. Prerequisite: consent of instructor. Restricted to 15 students. In-depth introduction and hands-on experience with the event-related potential (ERP) method in the study of attention, memory, and language and social cognitive neuroscience. —W. (W.) Luck, Swaab

209A. Introduction to Programming: Matlab (4)
Lecture/lab—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. Offered irregularly. —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: course 210 or consent of instructor. Restricted to 16 students. Critical presentation and discussion of the most influential advanced advanced studies in neuroimaging, emphasizing fMRI design/analysis and the integration of fMRI with EEG/MEG. (Same course as Neuroscience 211 and Neurobiophysics, Physiology, and Behavior 211.) (S/U grading only).—W. (W.) 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 memory, concepts [e.g., theory of mind, concepts about number], problem solving, and language from infancy to adolescence. —F. Gheit, Goodman, Graf Estes, Lomvuto

212B. Developmental Psychology: Social, Emotional, and Personality 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 social, emotional, and personality development. Development of moral reasoning and behavior, personality, self-concept, and social cognition from infancy to adolescence [may include adulthood]. —Thompson

217. Behavioral Genetics (4)
Lecture—3 hours; term paper. Prerequisite: consent of instructor. Course introduces human genetics, environment, and behavior. Not open for credit to students who have completed course 251. —W. (W.) Trainer
218A. Fundamentals of Animal Behavior (5)
Lecture/discussion—4 hours; discussion—1 hour. Prerequisite: consent of instructor; upper-division undergraduate introduction to the behavior of biology, 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.]—F. (F) 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.]—W. (W) 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 psychology emphasizing a selection of key psychological theories and research to contemporary investigations. Offered in alternate years. —Simonton

221. Academic Writing in Psychology (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Class size limited to 10 students. Strategies for developing and honing academic writing skills and writing productivity, with a particular focus on how to write a clear and compelling empirical journal article in psychology. May be repeated four times for credit with consent of instructor if student chooses to focus on a substantially different writing project. Offered irregularly. —F. Underwood

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. —F. 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. —S

241. Attitudes and Social Influence (4)
Lecture/discussion—3 hours; term paper. Prerequisite: consent of instructor. Survey of theory and research in the field of attitudes and social influence. Topics include attitude definition and measurement, major theories of attitude formation and change, the relationship between attitudes and behavior, and recent directions and controversies. Offered irregularly. —Ledgerwood

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. Offered irregularly. —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 discrimination, including sociocultural, motivational, and cognitive factors. Offered irregularly. —Hern, Sherman

245. Social Psychology (4)
Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and research in social psychology. —S. (S) Pickett, Robins

247. Personality (4)
Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and research in human personality. May be repeated for credit when topic differs. Offered in alternate years.

251. Topics in Genetic Correlates of Behavior (4)
Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Theory and experimentation 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.

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 functions, memory, emotion, language. One of three in three-quarter sequence. (Same course as Neuroscience 223.)—S. (S) Ranagan, 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.

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.

270. Topics in Personality and Social Psychology (4)
Seminar—4 hours. Prerequisite: graduate standing in psychology or consent of instructor. Critical study of a selected area of personality or social psychology. May be repeated for credit when topic differs. —F. (F)

272. Topics in Developmental Psychology (4)
Seminar—4 hours. Prerequisite: graduate standing in Psychology or consent of instructor. Selected topics in developmental psychology. May be repeated for credit when content differs. Offered in alternate years.

289A. Current Research in Psychology (3)
Seminar—2 hours. Prerequisite: graduate standing in Psychology or consent of instructor. Seminar on topics in current research in psychology. —F. (F) Petersen

289B. Current Research in Psychology (3)
Discussion—2 hours. Prerequisite: course 289A; graduate standing in Psychology or consent of instructor. Current theoretical research in specified topics in psychology. May be repeated for credit if topic differs. (Deferred grading only, pending completion of sequence.)

290A. Teaching Assistant Training Practicum (1-4)
Prerequisite: graduate standing. May be repeated for credit. (S/U grading only)—f. W. (F) Sih

Quantitative Biology and Bioinformatics

(From 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 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:

**Quantitative Biology and Bioinformatics................................. 18-24**

Core Courses ................................. B12

Programming: Computer Science

Engineering 10 or 30 or the equivalent* ........................................ 4

Quantitative Biology: Biological Sciences 132 or Mathematics 124 ................. 4

Bioinformatics: Computer Science 124 or 129 .................................... 4

Fall 2011 and on Revised General Education (GE) ART—Arts and Humanities; D—Discipline-Diversity; E—Ethnicity; G—Geology; GSS—Social Sciences; ABS—American Cultures; DD—Domestic Diversity; ESD—Ethnic Studies; GSS—Social Sciences; D—Discipline-Diversity; W—the Third World; WCW=World Culture; WRT=Writing Experience