PSYCHOLOGY

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FACULTY OF THE DEPARTMENT OF PSYCHOLOGY

Professors  Woo-kyoung Ahn, Stephen Anderson, Amy Arnsten, John Bargh, Paul Bloom, Thomas Brown, Tyrone Cannon, Joseph Chang, Marvin Chun, Margaret Clark, Ravi Dhar, John Dovidio, Carol Fowler (Adjunct), Tamar Gendler, Jeannette Ickovics, Marcia Johnson, Jutta Joormann, Dan Kahn, Alan Kazdin, Frank Keil, Joshua Knobe, Marianne LaFrance, Linda Mayes, Gregory McCarthy, Nathan Novemsky, Peter Salovey, Laurie Santos, Brian Scholl, Jane Taylor, Tom Tyler, Fred Volkmar, Victor Vroom, Karen Wynn

Associate Professors  Robert Kerns, Jr., Maria Piñango, Mary Schwab-Stone

Assistant Professors  Steve Wohn Chang, Yarrow Dunham, Avram Holmes, Hedy Kober, Jaime Napier, David Rand, Gregory Samanez-Larkin

Lecturers  Nancy Close, Nelson Donegan, Carla Horwitz, Kristi Lockhart, Mary O’Brien, Matthias Siemer, Marney White

The introduction to psychology is PSYC 110, a general survey course. PSYC 110 is a prerequisite for other 100-level courses only if indicated in their course descriptions; it is a prerequisite for all courses numbered 200 or above.

Courses in the department are organized so that they are best taken in several parallel sequences. Courses numbered from 120 to 190 and ending in a zero are core survey courses that introduce students to major areas of psychology and provide additional background for more advanced courses. These courses represent major content areas of psychology; students should sample broadly from them before specializing. Courses numbered from 200 to 209 focus on statistics and general methodology. Courses numbered from 210 to 299 teach data collection in various areas of psychology. Courses numbered from 300 to 399 are more advanced courses in a particular specialization. Senior seminars, whose enrollment is limited to twenty students, are numbered from 400 to 489. These seminars are best taken once a student has appropriate background. Courses numbered from 490 to 499 are special tutorial courses that require permission of the adviser and the director of undergraduate studies.

The standard major  The major in Psychology requires twelve term courses beyond PSYC 110, including the senior requirement.

1. Because psychology is so diverse a subject, every student is required to take four courses from the list below. Two of these courses must be from the social science point of view in psychology and two must be from the natural science point of view. At least one from each group must be a course designated as "Core" in the course listings. Students are expected to take their two core courses as early as possible in the major, normally within two terms after declaring their major.


   Natural science: PSYC 120, 130, 135, 137, 147, 149, 160, 161, 171, 190, 230L, 260, 270, 304, 315, 318, 320, 321, 322, 324, 327, 331, 337, 350, 376

2. Because statistical techniques and the mode of reasoning they employ are fundamental in psychology, a course in statistics (PSYC 200) is required, preferably prior to the senior year. A student may substitute STAT 103 for PSYC 200 or may substitute an examination arranged with the instructor of PSYC 200 for the course requirement. Students may take the examination only one time.

3. To assure some direct experience in collecting and analyzing data, students must elect at least one course, preferably prior to the senior year, in which research is planned and carried out. Courses numbered between 210 and 299 fulfill this research methods requirement.

4. To encourage consideration of the relation between psychology and other disciplines, students may, with permission of the director of undergraduate studies, count up to three term courses in other related departments toward the major. Students should consult with the director of undergraduate studies in Psychology about selecting outside courses. Appropriate courses are rare but are typically offered in anthropology, cognitive science, philosophy, political science, and the biological sciences. Some students may find courses in other subjects related to their major.

Students interested in research are encouraged to take an independent study course (PSYC 490, 491, 492, 493) as early as the sophomore year. Students may also take PSYC 495 for one-half course credit of independent research per term with prior permission of the faculty adviser and the director of undergraduate studies. These independent study courses are graded P/F. No more than a total of three credits from PSYC 490–499 combined may count toward the major.

B.S. degree  The B.S. degree is typically awarded to students who conduct empirical research through a directed research course. B.S. candidates must fulfill the statistics and research methods requirements of the major before starting the senior year. An empirical research project normally includes designing an experiment and collecting and analyzing the data.
B.A. degree  The B.A. degree is typically awarded to students who conduct a nonempirical literature review. There are no restrictions in the research format for the B.A.

Senior requirement  Majors are required to earn two course credits from courses numbered PSYC 400–489 or 496–499. At least one of these course credits must be taken during the senior year and, for the B.S. degree, at least one must be a directed research course (PSYC 498 or 499) taken during the senior year. Juniors may preregister for senior seminars at the end of the junior year. In order to count credits obtained from PSYC 496–499 toward the senior requirement, a student must submit a substantial final paper (a minimum of 20 pages).

Students who have already completed a course in the PSYC 490–495 range for a letter grade may apply it toward the senior requirement, with permission of the director of undergraduate studies.

Credit/D/Fail  No more than two term courses taken Credit/D/Fail may be applied toward the major; no 200-level course taken Credit/ D/Fail may be applied toward the major.

Departmental advisers  Schedules for all majors must be discussed with, and approved by, the director of undergraduate studies or the adviser for the neuroscience track in Psychology. Only then may a schedule be submitted to the residential college dean’s office. For questions concerning credits for courses taken at other institutions or at Yale but outside the Department of Psychology, students should consult with the director of undergraduate studies. For questions concerning the neuroscience track, students should consult with the director of undergraduate studies or the adviser for the neuroscience track in Psychology.

Distinction in the Major  To be considered for a B.S. degree with Distinction, a student must first submit a research proposal of one to two single-spaced pages, signed by the senior essay adviser, by the end of the registration period in the fall term of the senior year. The proposal must specify a research hypothesis, a rationale for the hypothesis, and proposed methods for collecting and analyzing data.

To be considered for a B.A. degree with Distinction, a student must first submit a senior essay proposal of one to two pages, signed by the essay adviser and specifying the research topic, by the end of the registration period in the fall term of the senior year.

Additionally, to be considered for Distinction in the Major with either degree, students must submit a senior essay to the Psychology department at least one week before the last day of classes in the final term of enrollment. The senior essay must be written during the senior year and must be a product of one or two of the 400-level courses (excluding PSYC 490–495 which are graded P/F) taken to fulfill the senior requirement. Senior essays that are submitted after the deadline will be subject to grade penalties.

Computer Science and Psychology major  The interdepartmental major in Computer Science and Psychology may be considered by students with interests lying squarely between the two disciplines. See under Computer Science and Psychology (http://catalog.yale.edu/ycps/subjects-of-instruction/computer-science-psychology) for more information.

Neuroscience track in Psychology  Students with a major interest in neuroscience may wish to elect the neuroscience track. Such students are considered Psychology majors for whom the requirements have been modified to accommodate their interests, and to reflect the multidisciplinary nature of modern neuroscience and psychology. Given the broad nature of the field of neuroscience, students may wish to concentrate their studies in one area of the field (e.g., behavioral, cellular and molecular, cognitive, affective, social, clinical, or developmental). Interested students are encouraged to meet with the track adviser, Gregory Samanez-Larkin, 318 SSS, 432-1150, g.samanezlarkin@yale.edu. Majors in the neuroscience track meet with the track adviser at the beginning of each term in their junior and senior years.

Requirements for the neuroscience track are the same as for the standard major, with the following exceptions:

1. Two terms of introductory biology are required for the major, either MCDB 120 or BIOL 101 and 102, and either E&EB 122 or BIOL 103 and 104. Students who have scored 5 on the Advanced Placement test in Biology may place out of these courses.

2. Students must take PSYC 160 or 170 and a data-collection course chosen from PSYC 230L, 260, or 270. MCDB 320 may substitute for the PSYC 160 or 170 requirement, or MCDB 320 and 321L may substitute for the PSYC 230L, 260, or 270 requirement, but not both. If MCDB 320 is substituted for a Psychology course, it cannot be counted as one of the two advanced science courses outside the department (see item 4 below).

3. As required for the standard major, students in the neuroscience track must take two courses from the social science list above, at least one of which must be designated as "Core" in the course listings. Students in the neuroscience track must also take a course from the natural science list in addition to the courses specified in item 1 above.

4. At least two advanced science courses must be chosen from Molecular, Cellular, and Developmental Biology and Ecology and Evolutionary Biology courses numbered 200 and above that deal with human and/or animal biology; recommended courses include MCDB 200, 202, 205, 210, 240, 300, 315, 320, E&EB 220, 225, and 240. Certain courses outside of these departments may also meet the advanced science requirement, including BENG 350, 421, CPSC 475, MB&B 300, 301, 420, 435, 443, 452, MATH 222, 225, 230, 231, and STAT 241. Other courses may qualify for this requirement with permission of the neuroscience track adviser. Laboratory courses do not count toward the advanced science requirement. Students should note that many advanced science courses have prerequisites that must be taken first.

5. The senior requirement for the neuroscience track is the same as for the standard major, except that the two required course credits from PSYC 400–489 or 496–499 must have neuroscience content. Students pursuing the B.S. degree in the track must carry out a
neuroscientific empirical project in PSYC 498 or 499 and must be supervised by a faculty member within the neuroscience area of the Psychology department. Students who wish to work with an affiliated faculty member studying neuroscience outside the department must obtain permission from the neuroscience track adviser.

**REQUIREMENTS OF THE MAJOR**

**STANDARD MAJOR**

**Prerequisite**  PSYC 110  
**Number of courses**  12 courses beyond prereq (incl senior req)  
**Specific course required**  PSYC 200  
**Distribution of courses**  
  B.A. – 2 social science courses and 2 natural science courses, as specified; 1 course numbered PSYC 210–299;  
  B.S. – Same, with completion of the stat and research methods reqs before senior year  
**Substitution permitted**  For PSYC 200, STAT 103 or exam arranged with instructor; up to 3 relevant courses in other depts, with DUS permission  
**Senior requirement**  
  B.A. – 2 course credits from PSYC 400–489 or 496–499, 1 during senior year;  
  B.S. – PSYC 498 or 499 taken during senior year; 1 addtl course credit from PSYC 400-489 or 496-499  

**NEUROSCIENCE TRACK**

**Prerequisite**  PSYC 110  
**Number of courses**  12 courses beyond prereq (incl senior req)  
**Specific courses required**  PSYC 160 or 170; PSYC 200; PSYC 230L, 260, or 270  
**Distribution of courses**  
  B.A. – 2 social science courses and 1 natural science course, as specified; at least 2 advanced science courses, as specified;  
  B.S. – Same, with completion of the stat and research methods reqs before senior year  
**Substitution permitted**  MCDB 320 for PSYC 160 or 170, or MCDB 320 and 321L for PSYC 230L, 260, or 270; for PSYC 200, STAT 103 or exam arranged with instructor  
**Senior requirement**  
  B.A. – 2 course credits from PSYC 400–489 or 496–499 with neuroscience content, 1 during senior year;  
  B.S. – PSYC 498 or 499 taken during senior year, with neuroscience content in a research project; 1 addtl course credit from PSYC 400–489 or 496–499 with neuroscience content

Courses

**PSYC 110a or b, Introduction to Psychology**  Staff  
A survey of major psychological approaches to the biological, cognitive, and social bases of behavior.  
**SO**  
* **PSYC 125a / CHLD 125a / EDST 125a, Child Development**  Nancy Close and Carla Horwitz  
The reading of selected material with supervised participant-observer experience in infant programs, a day-care and kindergarten center, or a family day-care program. Regularly scheduled seminar discussions emphasize both theory and practice. An assumption of the course is that it is not possible to understand children—theyir behavior and development—without understanding their parents and the relationship between child and parents. The focus is on infancy as well as early childhood. Enrollment limited to juniors and seniors.  
**WR, SO**  
Psychology: Social Science  

**PSYC 126b, Attraction and Relationships**  Margaret Clark  
Theory and empirical research on the antecedents and consequences of attraction, and on intra- and interpersonal processes that either facilitate or interfere with the formation and maintenance of close relationships. Methodological bases for rigorous study of these topics.  
**SO**  
Psychology: Social Science  

* **PSYC 127a or b / CHLD 127a or b / EDST 127a or b, Theory and Practice of Early Childhood Education**  Carla Horwitz  
Development of curricula for preschool children—infants through six-year-olds—in light of current research and child development theory.  
**WR, SO, RP**  
Psychology: Social Science  

* **PSYC 128b / CHLD 128b / EDST 128b, Language, Literacy, and Play**  Nancy Close and Carla Horwitz  
The complicated role of play in the development of language and literacy skills among preschool-aged children. Topics include social-emotional, cross-cultural, cognitive, and communicative aspects of play.  
**WR, SO, RP**  
Psychology: Social Science  

**PSYC 130a / CGSC 110a, Introduction to Cognitive Science**  April Ruiz  
An introduction to the interdisciplinary study of how the mind works. Discussion of tools, theories, and assumptions from psychology, computer science, neuroscience, linguistics, and philosophy.  
**SO**  
Psychology: Natural Science  
Psychology: Core
* PSYC 132a / CHLD 132a / SOCY 132a, The Concept of the Problem Child  Staff
Differing visions of good and bad, typical and atypical, children. Reasons why some children are seen as deviant and others as normal. Implications for public policy, medical practice, family dynamics, schooling, and the criminal justice and protective care systems. Sources include public health data, early childhood curricula, and depictions of problem children in literature and popular culture.  SO

PSYC 135a / CGSC 135a / HIST 118a / HSHM 216a, Minds and Brains in America  Henry Cowles
A survey of the science and medicine of mind and brain in America since 1800. Madness and the asylum; phrenology and psychoanalysis; psychology in politics, law, and advertising; the rise of the "neuro-" disciplines; mental health in public life. Texts from fields such as neurology, physiology, psychology, psychiatry, and philosophy. May not be taken after HSHM 409.  HU

PSYC 137a / LING 117a, Language and Mind  Maria Piñango
Knowledge of language as a component of the mind: mental grammars, the nature and subdivisions of linguistic knowledge in connection with the brain. The logical problem of language acquisition. The "universal grammar hypothesis" according to which all humans have an innate ability to acquire language. The connection between language acquisition and general cognitive abilities.  SO

Psychology: Natural Science

PSYC 140a, Developmental Psychology  Frank Keil
An introduction to research and theory on the development of perception, action, emotion, personality, language, and cognition from a cognitive science perspective. Focus on birth to adolescence in humans and other species. Prerequisite: PSYC 110.  SO

Psychology: Core
Psychology: Social Science

PSYC 141b, The Criminal Mind  Arielle Baskin-Sommers
Theoretical and empirical study of the development of criminal behavior, including constitutional, social, and neurobiological elements. Personality and psychopathological factors associated with criminal behavior; theoretical and psychobiological explanations of crime; the biological/environment interaction; the impact of psychobiological models for policy and intervention.  SO

PSYC 147a, Animal Models of Clinical Disorders  Nelson Donegan
An interdisciplinary approach to understanding and treating psychiatric disorders, integrating clinical psychology, psychiatry, and advances in basic neuroscience. Focus on how research with animal models can advance our understanding of psychiatric disorders and generate more effective treatments for patients. Topics include drug addiction, depression, Parkinson’s disease, and schizophrenia.  SC, SO

Psychology: Natural Science

PSYC 150a, Social Psychology  John Bargh
Study of social cognition, attitudes and persuasion, group processes, intergroup processes, prosocial behavior, aggression, and conformity. Theories, methodology, and applications of social psychology. Prerequisite: PSYC 110.  SO

Psychology: Core
Psychology: Social Science

PSYC 160a, The Human Brain  Gregory McCarthy
Introduction to the neural bases of human psychological function, including social, cognitive, and affective processing. Preparation for more advanced courses in cognitive and social neuroscience. Topics include memory, reward processing, neuroeconomics, individual differences, emotion, social inferences, and clinical disorders. Neuroanatomy, neurophysiology, and neuropharmacology are also introduced.  SC

Psychology: Core
Psychology: Natural Science

* PSYC 161b, Drugs, Brain, and Behavior  Hedy Kober
Psychoactive drugs and their effects on both brain and behavior. Pharmacological and brain mechanisms of different classes of legal, illegal, and medicinal drugs, including alcohol, caffeine, tobacco, stimulants, depressants, antidepressants, and hallucinogens. Individual drugs’ pharmacokinetics, mechanisms of action, dosing, routes of administration, and patterns and effects of use and misuse. Some attention to substance use disorders, prevention, and treatment.  SC

PSYC 180b, Abnormal Psychology  Jutta Joormann
The major forms of psychopathology that appear in childhood and adult life. Topics include the symptomatology of mental disorders; their etiology from psychological, biological, and sociocultural perspectives; and issues pertaining to diagnosis and treatment.  SO

PSYC 200b, Statistics  Gregory Samanez-Larkin
Measures of central tendency, variability, association, and the application of probability concepts in determining the significance of research findings.  QR

PSYC 233La, Research Methods in Emotion  Matthias Siemer
Current methods of empirical research in the psychological study of human emotion and its regulation. Focus on cognitive-experimental approaches. Students design a study on a topic related to emotion regulation, conduct an experiment, collect data, and perform statistical analyses. Prerequisites: PSYC 110 or 131 and a course in statistics, or with permission of instructor.  SO
Psychology

* PSYC 235a, Research Methods in Psychology  Staff
Introduction to general principles and strategies of psychological research. Topics include generating and testing hypotheses, laboratory and field experiments, scale construction, sampling, archival methods, case studies, ethics and politics of research, and Internet and cross-cultural methods. Hands-on research experience in laboratories. Prerequisites: PSYC 200 or STAT 103, or permission of instructor.  WR, SO

PSYC 250a, Research Methods in Clinical Psychology  Alan Kazdin
Introduction to the underpinnings, processes, and methods of scientific research utilized in clinical psychology. Rationale for various methods, generating and testing hypotheses, nonhuman animal models, laboratory and applied studies, assessment methods, ethical issues, protection of participants, and research findings in relation to public life and policy.  SO

* PSYC 260a, Research Methods in Behavioral Genetics  Tyrone Cannon
Methods of human behavioral genetics research. Focus on the genetics of psychiatric disorders, personality, and cognition. Students design and perform genetic-association analyses of behavioral traits, using existing datasets supplied by the instructor.  SO

* PSYC 270b, Research Methods in Behavioral Neuroscience  Nelson Donegan
Laboratory course in which students design and conduct research to study brain function and behavior. Emphasis on hands-on participation in behavioral and neuroscience techniques. Prerequisites: PSYC 160 or 170, and a course in statistics, or with permission of instructor.  SC

PSYC 304a / CGSC 304a, The Mental Lives of Babies and Animals  Karen Wynn
Interdisciplinary exploration of the cognitive, social, and emotional capacities of creatures lacking language and culture. The extent to which our complex psychology is unique to mature humans; the relative richness of a mental life without language or culture. Some attention to particular human populations such as children with autism and adults with language disorders.  SO

* PSYC 313b / CGSC 313b / PHIL 305b, Philosophy for Psychologists  Joshua Knobe
Introduction to frameworks developed within philosophy that have applications in psychological research. Principal topics include the self, causation, free will, and morality. Recommended preparation: a course in philosophy or psychology.  HU, SO

PSYC 318b / LING 220b, General Phonetics  Ryan Bennett
Investigation of possible ways to describe the speech sounds of human languages. Acoustics and physiology of speech; computer synthesis of speech; practical exercises in producing and transcribing sounds.  SO

* PSYC 324b, Nutrition and the Brain  Staff
Systematic study of nutrition’s effects on brain function. The role of dietary nutrients in neural physiology and cognition; critique of nutritional claims made by media sources and commercial products. Prerequisite: PSYC 110.  SC

PSYC 327a / LING 227a, Language and Computation I  Staff
Design and analysis of computational models of language. Topics include finite state tools, computational morphology and phonology, grammar and parsing, lexical semantics, and the use of linguistic models in applied problems. Prerequisite: prior programming experience or permission of instructor.  QR, SO

PSYC 330a, Psychology and the Law  Kristi Lockhart
Contributions of psychological theory and research to our understanding of the law and the criminal justice system. Topics include criminality, eyewitness testimony, lie detection, jury decision making, the death penalty, the insanity defense, civil commitment, prisons, repressed memories, children as witnesses and defendants, and the role of psychologists as expert witnesses and trial consultants.  SO

PSYC 331b / LING 231b, Neurolinguistics  Maria Piñango
The study of language as a cognitive neuroscience. The interaction between linguistic theory and neurological evidence from brain damage, degenerative diseases (e.g., Alzheimer’s disease), mental illness (e.g., schizophrenia), neuroimaging, and neurophysiology. The connection of language as a neurocognitive system to other systems such as memory and music.  SO

* PSYC 350a or b / CHLD 350a or b, Autism and Related Disorders  Staff
Weekly seminar focusing on autism and related disorders of socialization. A series of lectures on etiology, diagnosis and assessment, treatment and advocacy, and social neuroscience methods; topics cover infancy through adulthood. Supervised experience in the form of placement in a school, residence, or treatment setting for individuals with autism spectrum disorders. Details about admission to the course are explained at the first course meeting. Prerequisite: an introductory psychology course.  SO
Psychology: Natural Science

* PSYC 355a, Clinical Psychology in the Community  
  Kristi Lockhart
  Mental disorders as they are treated within a community setting. Students participate in a fieldwork placement, working either one-on-one or in groups with the psychiatrically disabled. Seminar meetings focus on such topics as the nature of severe mental disorders, the effects of deinstitutionalization, counseling skills, and social policy issues related to mental health. Prerequisite: PSYC 180 or permission of instructor.

Psychology: Social Science

* PSYC 372a / LING 490a, Research Methods in Linguistics  
  Raffaella Zanuttini
  An introduction to research methods in linguistics. Observational and experimental approaches to research in the field. Topics include collection and organization of linguistic data, basic field methods, and use of language corpora and databases. Introduction to research in language acquisition and language change. Prerequisites: one course in syntax and one course in phonology.

PSYC 376a, Learning and Memory  
  Thomas Brown
  The basic facts, general principles, and theories that describe how higher animals, from mice to humans, are changed by their experiences. The historically separate fields of learning and memory research desegregated under a neuroscientific perspective that recognizes the evolutionary continuity among higher animals. Prerequisites: introductory courses in biology and psychology, or permission of instructor.  
  SC, SO

Psychology: Natural Science

* PSYC 406b / CGSC 406b, The Evolution of Morality  
  Mark Sheskin
  The evolution of moral judgment and behavior. Foundational topics include competing characterizations of moral cognition, inclusive fitness, and literature on cross-cultural universals and differences. Debates include how much of adult morality is early-emerging in development vs. a late-emerging product that relies heavily on learning, the presence of morality in other species, and the relationship between the evolution of morality and the evolution of religious belief.  
  SO

* PSYC 409a, Science of Free Will  
  Thomas Brown
  The scientific facts and arguments behind the theory that free will is an illusion or invalid construct. Implications of this theory for religion, law, and morality. Supporting evidence drawn from the fields of psychology, neuroscience, genetics, physics, and complex adaptive systems.  
  SO

* PSYC 411b, Systems Neuroscience  
  Steve Wohn Chang
  This course provides an overview of the fundamental principles governing the central nervous system. Topics include the anatomy of the central nervous system, the neural mechanisms underlying cortical and subcortical control of behavior, various neuroscience techniques, as well as implications for nervous system disorders. The lectures will combine basic knowledge of the nervous system with the key experimental findings that led to new discoveries in brain function.  
  SC

* PSYC 413b / CGSC 413b, Mind, Brain, and Society  
  Marvin Chun
  Recent advances in modern neuroscience as they inform or complicate issues in society. Views from disciplines such as psychology, philosophy, economics, political science, law, and religion.  
  SO

* PSYC 417a, Etiology and Treatment of Addictions  
  Arielle Baskin-Sommers
  Research from the fields of cognitive neuroscience, psychology, sociology, and public health on the etiology and treatment of addictions. Social, neurobiological, and genetic explanations for addiction; evaluation of addiction treatments; the social construction of substance policies.  
  SO

  Joshua Knobe
  Introduction to the emerging field of moral cognition. Focus on questions about the philosophical significance of psychological findings. Topics include the role of emotion in moral judgment; the significance of character traits in virtue ethics and personality psychology; the reliability of intuitions and the psychological processes that underlie them.  
  HU

* PSYC 430b / HIST 413b / HSHM 420b, History of Addiction  
  Henry Cowles
  A survey of the understanding and treatment of addiction in the modern period. Psychology and psychiatry; alcoholism, abstinence, and prohibition; gambling and other behavioral addictions; recent work on habit formation; and addiction narratives in literature and film. Readings include primary texts from a range of scientific and medical fields as well as from court cases, political debates, and social and religious movements.  
  WR, HU

* PSYC 477b, Psychopathology and the Family  
  Kristi Lockhart
  The influence of the family on development and maintenance of both normal and abnormal behavior. Special emphasis on the role of early childhood experiences. Psychological, biological, and sociocultural factors within the family that contribute to variations in behavior. Relations between family and disorders such as schizophrenia, depression, anorexia nervosa, and criminality. Family therapy approaches and techniques.  
  SO

* PSYC 479b, Thinking  
  Woo-kyoung Ahn
  A survey of psychological studies on thinking and reasoning, with discussion of ways to improve thinking skills. Topics include judgments and decision making, counterfactual reasoning, causal learning, inductive inferences, analogical reasoning, problem solving, critical thinking, and creativity.  
  SO
* PSYC 489b, Principles of Cognitive and Behavior Therapy  Alan Kazdin
An examination of the diverse theories, principles, and treatments in behavior therapy, including operant and classical conditioning, cognitive behavioral approaches, and social learning. Enrollment limited to senior Psychology majors.  SO

* PSYC 490a and PSYC 491b, Directed Reading  Staff
Individual study for qualified students who wish to investigate an area of psychology not covered by regular departmental offerings. A student must be sponsored by a faculty member, who sets requirements and meets regularly with the student. To register, the student must submit a written plan of study approved by the adviser to the director of undergraduate studies. The normal minimum requirement is a term paper, but individual faculty members may set alternative equivalent requirements. May be elected for one or two terms. May not be used for the Psychology senior requirement.

* PSYC 492a and PSYC 493b, Directed Research  Staff
Empirical research projects for qualified students. A student must be sponsored by a faculty member, who sets the requirements and supervises research. To register, the student must submit a written plan of study approved by the adviser to the director of undergraduate studies. The normal minimum requirement is a written report of the completed research, but individual faculty members may set alternative equivalent requirements. May be elected for one or two terms. May not be used for the Psychology senior requirement.

PSYC 495a or b, Research Topics  Staff
Discussion and/or individual study of current topics or ongoing research projects. A student must be sponsored by a faculty member, who sets the requirements and supervises the coursework. Requirements can include attending lab meetings, performing research with a faculty member, or writing a final paper. To register, the student must submit a written plan of study approved by the faculty sponsor to the director of undergraduate studies. May be repeated for credit. May not be used for the Psychology senior requirement.  ½ Course cr

* PSYC 496a and PSYC 497b, Senior Requirement Directed Reading  Staff
Individual study for qualified seniors in the major who wish to investigate an area of psychology in depth as part of their senior requirement. A student must be sponsored by a faculty member, who sets requirements and meets regularly with the student. To register, students must submit a written plan of study approved by the adviser to the director of undergraduate studies. The minimum requirement is a final paper (20 pages or more), but individual faculty members may set additional requirements.

* PSYC 498a and PSYC 499b, Senior Requirement Directed Research  Staff
Empirical research projects for students pursuing research as part of their senior requirement. A student must be sponsored by a faculty member, who sets the requirements and supervises research. To register, the student must submit a written plan of study approved by the adviser to the director of undergraduate studies. All students must submit a paper that meets the substantial writing needed for the senior requirement (20 pages or more). Individual faculty members may set additional requirements.