PSYCHOLOGY AND NEUROSCIENCE

The Department of Psychology and Neuroscience at the University of Colorado Boulder offers PhD degrees in five programs:

• Behavioral, Psychiatric, and Statistical Genetics
• Behavioral Neuroscience
• Clinical Psychology
• Cognitive Psychology/Cognitive Neuroscience
• Social Psychology

For detailed information about each field of study, visit the department’s Graduate Program Areas webpage.

Note: The department does not offer a terminal master’s degree program.

Course codes for this program are PSYC and NRSC.

Doctoral Degrees

• Neuroscience - Doctor of Philosophy (PhD) (catalog.colorado.edu/graduate/colleges-schools/arts-sciences/programs-study/psychology-neuroscience/neuroscience-doctor-philosophy-phd)
• Psychology - Doctor of Philosophy (PhD) (catalog.colorado.edu/graduate/colleges-schools/arts-sciences/programs-study/psychology-neuroscience/psychology-doctor-philosophy-phd)

Certificate

• Neuroscience - Graduate Certificate (catalog.colorado.edu/graduate/colleges-schools/arts-sciences/programs-study/psychology-neuroscience/neuroscience-graduate-certificate)

Faculty

While many faculty teach both undergraduate and graduate students, some instruct students at the undergraduate level only. For more information, contact the faculty member’s home department.

Allen, David Lehigh (https://experts.colorado.edu/display/fisid_114466)
Senior Instructor; PhD, University of California-Los Angeles

Alpern, Herbert P.
Professor Emeritus

Arch, Joanna Jennifer (https://experts.colorado.edu/display/fisid_147415)
Assistant Professor; PhD, University of California-Los Angeles

Bachtell, Ryan Karn (https://experts.colorado.edu/display/fisid_146084)
Associate Professor; PhD, Oregon Health Science University

Banich, Marie (https://experts.colorado.edu/display/fisid_120646)
Professor; PhD, University of Chicago

Barrientos-Wood, Ruth M (https://experts.colorado.edu/display/fisid_117816)
Asst Research Professor; PhD, George Washington University

Barth, Daniel (https://experts.colorado.edu/display/fisid_100820)
Professor; PhD, University of California-Los Angeles

Berta, Joseph E (https://experts.colorado.edu/display/fisid_101962)
Senior Instructor; PhD, University of Colorado Boulder

Bidwell Kovalev, Lorna Cinnamon (https://experts.colorado.edu/display/fisid_155117)
Asst Research Professor; PhD, University of Colorado Boulder

Blair, Irene Verna (https://experts.colorado.edu/display/fisid_107261)
Professor; PhD, Yale University

Blechman, Elaine A.
Professor Emeritus

Bloom, Bernard L.
Professor Emeritus

Bourne, Lyle E. Jr
Professor Emeritus

Bryan, Angela (https://experts.colorado.edu/display/fisid_115216)
Professor; PhD, Arizona State University

Campeau, Serge (https://experts.colorado.edu/display/fisid_115395)
Professor; PhD, Yale University

Carey, Gregory (https://experts.colorado.edu/display/fisid_101322)
Associate Professor; PhD, University of Minnesota Twin Cities

Carter Carston, Ronald McKell (https://experts.colorado.edu/display/fisid_154921)
Assistant Professor; PhD, California Institute of Technology

Cartwright, Desmond S.
Professor Emeritus

Collins, Allan C.
Professor Emeritus

Colunga, Eliana (https://experts.colorado.edu/display/fisid_129477)
Associate Professor; PhD, Indiana University Bloomington

Correll, Joshua Raphael (https://experts.colorado.edu/display/fisid_151728)
Associate Professor; PhD, University of Colorado Boulder

Curran, Timothy (https://experts.colorado.edu/display/fisid_118454)
Professor; PhD, University of Oregon

Day, Heidi E W (https://experts.colorado.edu/display/fisid_116632)
Senior Instructor; PhD, University of Cambridge (England)

DeFries, John C.
Professor Emeritus

Dimidjian, Sona Armine (https://experts.colorado.edu/display/fisid_140084)
Associate Professor; PhD, University of Washington

Donaldson, Zoe (https://experts.colorado.edu/display/fisid_157087)
Assistant Professor; PhD, Emory University

Forward, John R.
Professor Emeritus

Friedman, Naomi P (https://experts.colorado.edu/display/fisid_109519)
Assistant Professor; PhD, University of Colorado Boulder
Gruber, June L (https://experts.colorado.edu/display/fisid_153634)
Assistant Professor; PhD, University of California-Berkeley

Harvey, Lewis Orvis (https://experts.colorado.edu/display/fisid_101173)
Professor; PhD, Pennsylvania State University

Healy, Alice F (https://experts.colorado.edu/display/fisid_100418)
Professor; PhD, Rockefeller University

Hernandez, Theresa D (https://experts.colorado.edu/display/fisid_102953)
Professor; PhD, University of Texas at Austin

Hewitt, John K (https://experts.colorado.edu/display/fisid_101035)
Professor; PhD, University of London (England)

Hill, Karl G.
Professor; PhD, Brandeis University

Hutchison, Kent Edward (https://experts.colorado.edu/display/fisid_113101)
Professor; PhD, Oklahoma State University

Ito, Tiffany Anne (https://experts.colorado.edu/display/fisid_113066)
Professor; PhD, University of Southern California

Jessor, Richard
Professor Emeritus

Jones, Matthew Carl (https://experts.colorado.edu/display/fisid_144611)
Associate Professor; PhD, University of Michigan Ann Arbor

Judd, Charles M (https://experts.colorado.edu/display/fisid_101853)
Professor; PhD, Columbia University In the City of New York

Kaufmann, Vyga G. (https://experts.colorado.edu/display/fisid_151089)
Instructor

Keller, Matthew C (https://experts.colorado.edu/display/fisid_144507)
Associate Professor; PhD, University of Michigan Ann Arbor

Kim, Albert E. (https://experts.colorado.edu/display/fisid_143740)
Associate Professor; PhD, University of Pennsylvania

King, D Brett (https://experts.colorado.edu/display/fisid_103815)
Senior Instructor; PhD, Colorado State University

Kintsch, Walter
Professor Emeritus

LeBourgeois, Monique Katherine (https://experts.colorado.edu/display/fisid_148411)
Associate Professor; PhD, University of Southern Mississippi

Loersch, Christopher Alan (https://experts.colorado.edu/display/fisid_149841)
Assistant Professor; PhD, Ohio State University

Maier, Steven F (https://experts.colorado.edu/display/fisid_100482)
Distinguished Professor; PhD, University of Pennsylvania

McClelland, Gary H.
Professor Emeritus

McGraw, Albert Peter (https://experts.colorado.edu/display/fisid_133262)
Associate Professor; PhD, Ohio State University

Miklowitz, David J (https://experts.colorado.edu/display/fisid_105771)
Professor Adjunct; PhD, University of California-Los Angeles

Mittal, Vijay (https://experts.colorado.edu/display/fisid_148386)
Asst Professor Adjunct; PhD, Emory University

Miyake, Akira (https://experts.colorado.edu/display/fisid_107321)
Professor; PhD, Carnegie Mellon University

Munakata, Yuko (https://experts.colorado.edu/display/fisid_125036)
Professor; PhD, Carnegie Mellon University

O’Reilly, Randall Charles (https://experts.colorado.edu/display/fisid_110512)
Professor; PhD, Carnegie Mellon University

Olson, Richard Kellogg (https://experts.colorado.edu/display/fisid_103121)
Professor Emeritus; PhD, University of Oregon

Park, Bernadette (https://experts.colorado.edu/display/fisid_103732)
Professor; PhD, Northwestern University

Pedersen, Eric
Assistant Professor; PhD, University of Miami

Pittman-Wagers, Justina (https://experts.colorado.edu/display/fisid_117148)
Senior Instructor; PsyD, University of Denver

Polson, Peter G.
Professor Emeritus

Ramirez, Albert
Professor Emeritus

Rhee, Soo H (https://experts.colorado.edu/display/fisid_123401)
Associate Professor; PhD, Emory University

Richardson, Emily (https://experts.colorado.edu/display/fisid_115007)
Clinical Assoc Professor; PhD, University of Iowa

Root, David H.
Assistant Professor; PhD, Rutgers University

Rudy, Jerry W (https://experts.colorado.edu/display/fisid_101550)
Professor; PhD, University of Virginia

Saddoris, Michael Paul (https://experts.colorado.edu/display/fisid_152979)
Assistant Professor; PhD, Johns Hopkins University

Sasnett-Martichuski, Diane Kay (https://experts.colorado.edu/display/fisid_111599)
Senior Instructor; PhD, Colorado State University

Sharpless, Seth K.
Professor Emeritus

Smutzler, Natalie
Senior Instructor; PhD, Indiana University

Spencer, Robert L (https://experts.colorado.edu/display/fisid_104362)
Professor; PhD, University of Arizona
Stallings, Michael C (https://experts.colorado.edu/display/fisid_108745)
Professor, PhD, University of Southern California

Stratford, Jennifer
Instructor; PhD, Florida State University

Strife, Samantha
Instructor; PhD, Colorado State University

Taylor, Ronald G.
Professor Emeritus

Thomas, David R.
Professor Emeritus

Urland, Geoffrey Raymond (https://experts.colorado.edu/display/fisid_151086)
Lecturer

Van Boven, Leaf D (https://experts.colorado.edu/display/fisid_126291)
Professor, PhD, Cornell University

Vigers, Alison Jane (https://experts.colorado.edu/display/fisid_142378)
Instructor

Vrieze, Scott Ian (https://experts.colorado.edu/display/fisid_153059)
Assistant Professor; PhD, University of Minnesota Central office

Wager, Tor Dessart (https://experts.colorado.edu/display/fisid_147666)
Professor; PhD, University of Michigan Ann Arbor

Watkins, Linda R (https://experts.colorado.edu/display/fisid_101513)
Distinguished Professor; PhD, Virginia Commonwealth University

Weatherley, Donald A.
Professor Emeritus

Wehner, Jeanne M.
Professor Emeritus

Wertheimer, Michael
Professor Emeritus

Whisman, Mark (https://experts.colorado.edu/display/fisid_113391)
Professor; PhD, University of Washington

Willcutt, Erik G (https://experts.colorado.edu/display/fisid_113861)
Professor; PhD, University of Denver

Wilson, James R.
Professor Emeritus

**Courses**

**Neuroscience**

**NRSC 5015 (3) Affective Neuroscience**
Experiencing and learning from affect—emotional value—is a fundamental part of the human experience. When people started thinking of brains as computers, research on emotion fell by the wayside. Recently however, this has changed, and there is an explosion of work on the brain mechanisms of affective value. Covers recent advances in understanding the emotional brain.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4015
Requisites: Restricted to graduate students only.

**NRSC 5032 (3) Neurobiology of Learning and Memory**
Provides a comprehensive treatment of how the brain acquires, stores, and retrieves memories. To do this we will consider (a) the methods used to address these issues, (b) what we know about how brain systems are organized to support memories of different types, and (c) the synaptic mechanisms that are involved.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4032
Requisites: Restricted to graduate students only.

**Additional Information:** Departmental Category: Biological

**NRSC 5052 (4) Behavioral Neuroscience**
This advanced course the anatomy and physiology of the central nervous system in detail, and applies that understanding to the visual, auditory, and sensorimotor systems, demonstrating how the anatomy and physiology of the nervous system can be used to explain behavior. The laboratory uses live animals and computer simulations.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4052 and PSYC 4052 and PSYC 5052
Requisites: Restricted to graduate students only.

**Additional Information:** Departmental Category: Biological

**NRSC 5072 (3) Clinical Neuroscience: A Clinical and Pathological Perspective**
Provides a review of the anatomy and physiology of the nervous system and then explores how alterations in these systems can result in neurologic or psychiatric disorders. Emphasizes pathological neuroanatomy, neurophysiology and neuropharmacology, which is essential for understanding problems related to health and disease.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4072
Requisites: Restricted to graduate students only.

**Additional Information:** Departmental Category: Biological

**NRSC 5082 (3) Neural Circuits of Learning and Decision Making**
Provides an in-depth survey of the neural mechanisms of learning, motivated behavior and decision making. Analysis will focus on the interaction of neural circuits underlying these processes with particular attention to the cellular, molecular and information-processing aspects of identified pathways and considered into the context learning-based and neuroeconomic models of choice.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4082
Requisites: Restricted to graduate students only.

Grading Basis: Letter Grade

**NRSC 5092 (4) Behavioral Neuroendocrinology**
Provides an introduction to neuroendocrinology with a focus on the interaction between hormones and brain function. In addition to attending and meeting all the requirements for the lecture portion of the course, graduate students meet for an additional hour each week to discuss in depth behavioral neuroendocrinology relevant research articles.

Equivalent - Duplicate Degree Credit Not Granted: NRSC 4092
Requisites: Restricted to graduate students only.

**Additional Information:** Departmental Category: Biological
NRSC 5100 (2-5) Introduction to Neuroscience I
Provides an intensive introduction to the principles of neuroscience, initially covering the detailed neuroanatomy of human forebrain, hindbrain, and spinal cord. This is followed by neurophysiology with a concentration on the electrophysiology of neural systems. The basics of neuroanatomy and neurophysiology with a concentration on the electrophysiology are then applied to an examination of the structure and function of visual, auditory, and sensorimotor systems in animal and man.
Repeatable: Repeatable for up to 5.00 total credit hours.
Requisites: Restricted to graduate students only.
Recommended: Requisite, restricted to Interdepartmental Neuroscience Program or instructor consent required.

NRSC 5110 (3) Introduction to Neuroscience II
Provides an intensive interdisciplinary introduction to the principles of neuroscience. It is a sequel to NRSC 5100. Provides a detailed overview of neurochemistry, neurodevelopment, neuromotor control, neurogenetics, and cognitive neuroscience. Open to undergraduates with instructor permission.
Requisites: Requires a prerequisite course of NRSC 5100 or NRSC 4052 or PSYC 4052 (minimum grade C-).

NRSC 5132 (3) Neuropharmacology
Study of drug action within the central nervous system. This course is designed to provide a fundamental understanding of the neurobiological and neurochemical mechanisms of drug action. Topics covered include the following: 1) principles of pharmacology; 2) brain neurotransmitter systems; 3) biochemical basis of psychiatric disorders and their pharmacological treatment.
Equivalent - Duplicate Degree Credit Not Granted: NRSC 4132
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Biological

NRSC 5262 (3) Mammalian Neuroanatomy
Provides a detailed overview of peripheral and central nervous system connectional neuroanatomy targeted at delineating functional sensory, motor and motivational systems and the control of behavior and cognition. Emphasizes histological, anatomical and functional techniques employed in investigations of the nervous system. Formerly PSYC 5262.
Requisites: Requires a prerequisite course of NRSC 2100 or NRSC 5100 or NRSC 4052 or PSYC 4052 (minimum grade C-).
Additional Information: Departmental Category: Biological

NRSC 5545 (3) Neurobiology of Addiction
Covers an intensive survey and synthesis of recent findings contributing to our understanding of the neurobiological basis of addiction. Analysis of both drug and behavioral addictions will be made at the molecular, cellular and neurocircuitry levels and synthesized into models utilizing common themes between various addictions and contributing pathologies.
Equivalent - Duplicate Degree Credit Not Granted: NRSC 4545
Requisites: Restricted to graduate students only.

NRSC 5911 (3) Teaching of Neuroscience
Offers a rich experience for students to develop and organize curriculum to complement the Neuroscience core courses. Offers a valuable teaching experience utilizing computational modeling to simulate experimental results. Any Neuroscience curriculum course, such as Intro to Neuroscience I or II, Neuropharmacology, Neurobiology of Learning and Memory or Behavioral Neuroscience may be appropriate with instructor consent.
Equivalent - Duplicate Degree Credit Not Granted: NRSC 4911
Requisites: Restricted to graduate students only.

NRSC 6100 (2) Advances in Neuroscience Seminar
Designed for beginning graduate students interested in neuroscience. Students read, discuss, and evaluate the primary literature on a number of current topics in neuroscience as well as attend the seminar program in neuroscience.
Repeatable: Repeatable for up to 8.00 total credit hours.
Requisites: Restricted to graduate students only.

NRSC 6602 (1) Behavioral Neuroscience Professional Skills Development
Enrolled graduate students in the behavioral neuroscience program will be asked to prepare, present and receive feedback on scientific presentations of their own research or from review of a current research project.
Repeatable: Repeatable for up to 14.00 total credit hours.
Grading Basis: Letter Grade

NRSC 7102 (2-3) Topics in Neuroscience
Advanced seminar dealing with different specialized topics in neuroscience.
Repeatable: Repeatable for up to 9.00 total credit hours.
Requisites: Requires a prerequisite course of NRSC 5110 (minimum grade D-).

NRSC 7152 (3) Special Topics in Neuroscience V
Advanced seminar dealing with several different specialized topics in Neuroscience.
Repeatable: Repeatable for up to 9.00 total credit hours. Allows multiple enrollment in term.
Requisites: Requires a prerequisite course of NRSC 5110 (minimum grade D-).

Psychology
PSYC 5052 (4) Behavioral Neuroscience
This advanced course the anatomy and physiology of the central nervous system in detail, and applies that understanding to the visual, auditory, and sensorimotor systems, demonstrating how the anatomy and physiology of the nervous system can be used to explain behavior. The laboratory uses live animals and computer simulations.
Equivalent - Duplicate Degree Credit Not Granted: PSYC 4052 and NRSC 4052 and NRSC 5052
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Biological

PSYC 5082 (2-3) Seminar: Biological Psychology
Special topics concerning biological bases of behavior. Instructor consent required.
Repeatable: Repeatable for up to 3.00 total credit hours.
Requisites: Requires a prerequisite course of PSYC 4052 (minimum grade D).
Additional Information: Departmental Category: Biological
PSYC 5102 (3) Introduction to Behavioral Genetics
Provides introduction to basic principles of genetics in the study of behavior, methods used to examine the influences of genes and environment on behavior and interpretation of studies using these methods.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Biological

PSYC 5112 (3) Concepts in Behavioral Genetics
Examines selected topics in greater detail than is possible in the comprehensive undergraduate course in behavioral genetics (PSYC 3102). Topics covered may include inheritance of behavioral characteristics from perspectives of pharmacogenetics, transmission genetics, biochemical genetics, and evolutionary genetics. Instructor consent required.
Repeatable: Repeatable for up to 9.00 total credit hours. Allows multiple enrollment in term.
Additional Information: Departmental Category: Biological

PSYC 5122 (3) Quantitative Genetics
Surveys principles of genetics of quantitative characteristics. Topics include gene frequencies, effects of mutation, migration, and selection. Also looks at correlations among relatives, heritability, inbreeding, crossbreeding, and selective breeding.
Additional Information: Departmental Category: Biological

PSYC 5131 (3) Affective Science
Core graduate course on affective science and fulfills APA Cognitive and Affective Aspects of Behavior Requirement. Introduces students to a diverse array of theoretical and empirical issues related to the study of human emotion. Evolutionary theories of emotions; cognitive and behavioral aspects of emotion; neurobiological mechanisms; development of emotion; and psychopathology and emotion.
Requisites: Restricted to Psychology (PSYC) graduate students only.
Additional Information: Departmental Category: Biological

PSYC 5145 (4) Advanced Cognitive Psychology
Advanced course in human cognitive processes. Covers key aspects of cognition, such as perception, attention, learning, memory, language and thinking. Discusses major theories and ideas in terms of the research they have inspired. Emphasis varies with instructor. One lab per week and a research project is required. Instructor consent required.
Equivalent - Duplicate Degree Credit Not Granted: PSYC 4145
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General

PSYC 5175 (4) Computational Cognitive Neuroscience
Introduction to cognitive neuroscience (how the brain gives rise to thought) using computer simulations based on the neural networks of the brain. Covers a full range of cognitive phenomena including perception and attention, learning and memory, language, and higher-level cognition based on both large-scale cortical neuroanatomy and detailed properties of cortical neural networks. One lab per week. Instructor consent required.
Equivalent - Duplicate Degree Credit Not Granted: PSYC 4175
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Experimental

PSYC 5200 (3) Physiological Genetics and Genomics
Covers fundamental concepts in molecular genetics/genomics with physiological applications. Topics include structure and function of nucleic acids, genome structure, genetic and genomic research tools, methods for identifying disease-causing mutations, regulation of gene expression, pharmacogenetics, gene therapy and ethical issues in modern genomics. First course of a 3-course series recommended for IBG students. Includes a recitation section.
Equivalent - Duplicate Degree Credit Not Granted: IPHY 4200 and IPHY 5200
Requisites: Restricted to Integrative Physiology (IPHY or C-IPHY) or Psychology (PSYC) graduate students only.
Additional Information: Departmental Category: General

PSYC 5212 (4) Advanced Cognitive Psychology
Advanced course in human cognitive processes. Covers key aspects of cognition, such as perception, attention, learning, memory, language and thinking. Discusses major theories and ideas in terms of the research they have inspired. Emphasis varies with instructor. One lab per week and a research project is required. Instructor consent required.
Equivalent - Duplicate Degree Credit Not Granted: PSYC 4145
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General

PSYC 5222 (3) Quantitative Genetics
Surveys principles of genetics of quantitative characteristics. Topics include gene frequencies, effects of mutation, migration, and selection. Also looks at correlations among relatives, heritability, inbreeding, crossbreeding, and selective breeding.
Additional Information: Departmental Category: Biological

PSYC 5242 (3) Biometrical Methods in Behavioral Genetics
Studies development of structural models appropriate to behavioral genetics and the estimation procedures necessary for their application. Instructor consent required.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General

PSYC 5423 (3) Research Problems in Clinical Psychology
Intensively surveys major theories, research findings, and behavioral characteristics associated with deviant reaction patterns. Instructor consent required.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 5433 (3) Adult Psychopathology
Intensively surveys major theories, research findings, and behavioral characteristics associated with deviant reaction patterns. Instructor consent required.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 5453 (3) Developmental Psychopathology
Examines the development of psychopathology across the lifespan, including etiological influences, neurological correlates, symptom presentation, and clinical diagnosis and intervention. Instructor consent required.
Requisites: Restricted to Psychology (PSYC) graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 5541 (1-6) Special Topics in Psychology
Studies and analyzes special interest topics from the broad and diversified field of psychology. Particular section content is determined by instructor.
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General
**PSYC 5606 (3) Proseminar: Social-Personality Psychology**
Provides a thorough introduction to methods and theories in social psychology concerned with topics such as the self, social cognition, judgment and decision making, attitude formation and change, small group processes, inter-group relations, health and social psychology, and others. Instructor consent required.
**Repeatability:** Repeatability for up to 12.00 total credit hours. Allows multiple enrollment in term.
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

**PSYC 5656 (3) Advanced Graduate Research Methods**
Provides training in the philosophical roots of empirical research, inference of causality, internal and external validity and reliability. These topics will be covered as they relate to a range of research designs including passive observational, experimental, quasi-experimental, meta-analytic and longitudinal. Additional topics include statistical inference and research ethics.
**Requisites:** Restricted to Psychology (PSYC) graduate students only.
**Grading Basis:** Letter Grade
**Additional Information:** Departmental Category: Social

**PSYC 5666 (2) Perception and Attention Proseminar**
Required proseminar for students in the Cognitive Psychology Ph.D. program. Provides an introduction to current thinking about sensory and perceptual processing, object recognition and attention. Students will read peer-reviewed journal articles and make class presentations on appropriate topics, including methods of data collection and analysis. Graduate students in all programs are welcome and advanced undergraduates are welcome with instructor consent.
**Repeatability:** Repeatable for up to 4.00 total credit hours. Allows multiple enrollment in term.
**Additional Information:** Departmental Category: Experimental

**PSYC 5685 (2-3) Research Methods Proseminar**
Main topic is research methods in cognitive psychology, with an emphasis on experimental methods. Skills and knowledge will be gained that are necessary to A) critically evaluate existing research and B) design, conduct, analyze and write up experimental studies. Required for graduate students in Cognitive Psychology; graduate students in all programs and advanced undergraduates welcome with instructor consent.
**Repeatability:** Repeatable for up to 4.00 total credit hours. Allows multiple enrollment in term.
**Additional Information:** Departmental Category: Experimental

**PSYC 5695 (2) Memory Proseminar**
Provides beginning Ph.D. students with a basic introduction to (primarily human) memory research. One of the six required proseminar for students in the Cognitive Psychology Ph.D. program. Includes consideration of experimental, theoretical, behavioral and cognitive neuroscience perspectives on memory. Graduate students in all programs are welcome and advanced undergraduates are welcome with instructor consent.
**Additional Information:** Departmental Category: Experimental

**PSYC 5741 (4) General Statistics**
Surveys probability and statistics in psychology. Instructor consent required.
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

**PSYC 5751 (4) General Statistics**
Continuation of PSYC 5741. Instructor consent required.
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

**PSYC 5761 (3) Structural Equation Modeling**
Provides training in the use of structural equation modeling, a class of analytic techniques that include the estimation of unobserved, or latent, constructs and an estimation of relationships among latent constructs.
**Recommended:** Prerequisite successful completion of graduate level statistics.
**Additional Information:** Departmental Category: General

**PSYC 5815 (2) Language Proseminar**
Introduction to research on human language. A required proseminar for Cognitive Psychology Ph.D. students. Covers research at the cognitive, neural, and computational levels. Addresses phenomena at the levels of phonology, grammar, and meaning. Emphasizes interrelationships between language and other domains of cognition (perception, memory, executive function). Graduate students in all programs and advanced undergraduates welcome with instructor consent.
**Repeatability:** Repeatable for up to 4.00 total credit hours. Allows multiple enrollment in term.
**Additional Information:** Departmental Category: Experimental

**PSYC 5825 (2) Executive Function Proseminar**
Provides beginning Ph.D. students with an introduction to the study of executive functions. Required proseminar for students in the Cognitive Psychology Ph.D. program. Includes consideration of working memory, inhibition, multi-tasking, monitoring, selection, lifespan changes and social/clinical applications at the cognitive, neural and computational levels. Graduate students in all programs are welcome and advanced undergraduates are welcome with instructor consent.
**Additional Information:** Departmental Category: Experimental

**PSYC 5835 (2) Thinking Proseminar**
Provides beginning Ph.D. students with a basic introduction to research on complex human cognition, including reasoning, problem solving, decision making, analogy, concept learning and knowledge representation. Includes consideration of theoretical, behavioral and cognitive neuroscience perspectives. One of six proseminar modules required of students in the Cognitive Psychology Ph.D. program. Graduate students in all programs and advanced undergraduates welcome with instructor consent.
**Additional Information:** Departmental Category: Experimental

**PSYC 6200 (3) Issues and Methods in Cognitive Science**
Interdisciplinary introduction to cognitive science, examining ideas from cognitive psychology, philosophy, education, and linguistics via computational modeling and psychological experimentation. Includes philosophy of mind; learning; categorization; vision and mental imagery; consciousness; problem solving; decision making, and game-theory; language processing; connectionism. No background in computer science will be presumed.
**Equivalent - Duplicate Degree Credit Not Granted:** CSCI 6402 and EDUC 6504 and LING 6200 and PHIL 6310 and SLHS 6402
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

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**PSYC 5741 (4) General Statistics**
Surveys probability and statistics in psychology. Instructor consent required.
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

**PSYC 5751 (4) General Statistics**
Continuation of PSYC 5741. Instructor consent required.
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General

**PSYC 5761 (3) Structural Equation Modeling**
Provides training in the use of structural equation modeling, a class of analytic techniques that include the estimation of unobserved, or latent, constructs and an estimation of relationships among latent constructs.
**Recommended:** Prerequisite successful completion of graduate level statistics.
**Additional Information:** Departmental Category: General

**PSYC 5815 (2) Language Proseminar**
Introduction to research on human language. A required proseminar for Cognitive Psychology Ph.D. students. Covers research at the cognitive, neural, and computational levels. Addresses phenomena at the levels of phonology, grammar, and meaning. Emphasizes interrelationships between language and other domains of cognition (perception, memory, executive function). Graduate students in all programs and advanced undergraduates welcome with instructor consent.
**Repeatability:** Repeatable for up to 4.00 total credit hours. Allows multiple enrollment in term.
**Additional Information:** Departmental Category: Experimental

**PSYC 5825 (2) Executive Function Proseminar**
Provides beginning Ph.D. students with an introduction to the study of executive functions. Required proseminar for students in the Cognitive Psychology Ph.D. program. Includes consideration of working memory, inhibition, multi-tasking, monitoring, selection, lifespan changes and social/clinical applications at the cognitive, neural and computational levels. Graduate students in all programs are welcome and advanced undergraduates are welcome with instructor consent.
**Additional Information:** Departmental Category: Experimental

**PSYC 5835 (2) Thinking Proseminar**
Provides beginning Ph.D. students with a basic introduction to research on complex human cognition, including reasoning, problem solving, decision making, analogy, concept learning and knowledge representation. Includes consideration of theoretical, behavioral and cognitive neuroscience perspectives. One of six proseminar modules required of students in the Cognitive Psychology Ph.D. program. Graduate students in all programs and advanced undergraduates welcome with instructor consent.
**Additional Information:** Departmental Category: Experimental

**PSYC 6200 (3) Issues and Methods in Cognitive Science**
Interdisciplinary introduction to cognitive science, examining ideas from cognitive psychology, philosophy, education, and linguistics via computational modeling and psychological experimentation. Includes philosophy of mind; learning; categorization; vision and mental imagery; consciousness; problem solving; decision making, and game-theory; language processing; connectionism. No background in computer science will be presumed.
**Equivalent - Duplicate Degree Credit Not Granted:** CSCI 6402 and EDUC 6504 and LING 6200 and PHIL 6310 and SLHS 6402
**Requisites:** Restricted to graduate students only.
**Additional Information:** Departmental Category: General
PSYC 6603 (1) Professional Issues in Clinical Psychology
Covers a range of topics important for professional development in clinical psychology, including preparation and delivery of research presentations, preparation of grant proposals/manuscripts and practicum experience (i.e., interviewing and assessment, treatment planning, intervention and documentation). Intended to prepare students for careers as research scientists and clinicians. Instructor consent required.
Repeatable: Repeatable for up to 10.00 total credit hours.
Requisites: Restricted to Psychology (PSYC) graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 6605 (1) Cognitive Psychology Research Update
Provides summaries of current research by graduate students and faculty members in the Cognitive Psychology program in the Department of Psychology and Neuroscience. Professional Development issues relevant to cognitive psychologists will also be discussed. Graduate students in all programs and advanced undergraduates welcome with instructor consent.
Repeatable: Repeatable for up to 12.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to Psychology (PSYC) graduate students only.
Grading Basis: Pass/Fail
Additional Information: Departmental Category: Experimental

PSYC 6606 (1) Professional Issues in Social Psychology
Covers a range of topics important for professional development in social psychology, including preparation and delivery of research presentations, preparation of grant proposals and manuscripts, and peer review of manuscripts. Intended to prepare students for careers as research scientists.
Repeatable: Repeatable for up to 6.00 total credit hours.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Social

PSYC 6761 (3) Topics in Advanced Structural Equations Modeling
Covers topics in advanced structural equation modeling, including modeling with nonlinear observed variables, latent variable interactions, longitudinal models, mixture models and transition analysis. Other topics will be covered by request.
Recommended: Prerequisite PSYC 5761.
Additional Information: Departmental Category: General

PSYC 6831 (2) Interdisciplinary Social Science Professional Socialization
Trains graduate students and provides professional socialization in interdisciplinary social science research. Open to all interested students, with programming provided by the Institute of Behavioral Science. Sessions include IBS-housed colloquia and workshops in professional socialization, technological tools, interdisciplinary research, ethics, grant writing, etc. Students workshop and submit a research paper.
Equivalent - Duplicate Degree Credit Not Granted: SOCY 6851
Repeatable: Repeatable for up to 4.00 total credit hours.
Requisites: Restricted to graduate students only.
Grading Basis: Pass/Fail
Additional Information: Departmental Category: General

PSYC 6841 (1-3) Independent Study
Repeatable: Repeatable for up to 7.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General

PSYC 6911 (1-3) Research Practicum
Repeatable: Repeatable for up to 3.00 total credit hours.
Additional Information: Departmental Category: General

PSYC 6941 (1) Master's Degree Candidate
Repeatable: Repeatable for up to 7.00 total credit hours. Allows multiple enrollment in term.
Grading Basis: Pass/Fail
Additional Information: Departmental Category: General

PSYC 6951 (1-6) Master's Thesis
Repeatable: Repeatable for up to 7.00 total credit hours. Allows multiple enrollment in term.
Additional Information: Departmental Category: General

PSYC 7012 (1-3) Research in Behavioral Genetics
Individual research projects.
Repeatable: Repeatable for up to 7.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Biological

PSYC 7012 (2) Seminar: Behavioral Genetics
Intensive study of selected topics in behavioral genetics. Emphasizes recent research. Attention to both human and animal studies. Instructor consent required.
Repeatable: Repeatable for up to 8.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Biological

PSYC 7102 (2) Seminar: Experimental Psychology
Advanced seminar dealing with different specialized topics, at the discretion of the instructor, in different years. Topics chosen are within the broad range of experimental psychology. Instructor consent required.
Repeatable: Repeatable for up to 9.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: General

PSYC 7215 (3) Seminar: Experimental Psychology
Advanced seminar dealing with different specialized topics, at the discretion of the instructor, in different years. Topics chosen are within the broad range of experimental psychology. Instructor consent required.
Repeatable: Repeatable for up to 9.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Experimental

PSYC 7291 (3) Multivariate Analysis
Familiarizes students with scientific concepts, matrix theory, and computer techniques of multivariate analyses for psychological research. Topics include cluster and factor analysis, multiple regression, and discriminant functions. Emphasizes research technology rather than mathematical theory. Instructor consent required.
Additional Information: Departmental Category: General

PSYC 7315 (2) Advanced Research Seminar on Human Memory
Addresses topics in the experimental psychology of human memory. Specific content varies from semester to semester. Both theoretical issues and contemporary empirical work will be reviewed. Each student will be required to engage in laboratory work outside of class, which will include an original experiment. Graduate students in all programs and advanced undergraduates welcome with instructor consent.
Additional Information: Departmental Category: Experimental
PSYC 7415 (2) Cognitive Science Research Practicum
Independent, interdisciplinary research project in cognitive science for advanced graduate students pursuing a joint PhD in an approved core discipline and cognitive science. Research projects integrate at least two areas within the cognitive sciences: psychology, computer science, linguistics, education, philosophy. Students need commitments from two mentors for their project.
Equivalent - Duplicate Degree Credit Not Granted: CSCI 7412 and EDUC 6506 and LING 7415 and PHIL 7415 and SLHS 7418
Requisites: Requires a prerequisite course of CSCI 6402 or EDUC 6504 or LING 6200 or PHIL 6310 or PSYC 6200 (minimum grade B). Restricted to graduate students only.
Recommended: Prerequisite EDUC 6505.
Additional Information: Departmental Category: Experimental

PSYC 7425 (2) Cognitive Science Research Practicum 2
Independent, interdisciplinary research project in cognitive science for advanced graduate students pursuing a joint PhD in an approved core discipline and cognitive science. Research projects integrate at least two areas within the cognitive sciences: psychology, computer science, linguistics, education, philosophy. Students need commitments from two mentors for their project.
Equivalent - Duplicate Degree Credit Not Granted: CSCI 7422 and EDUC 6516 and LING 7425 and PHIL 7425 and SLHS 7428
Requisites: Requires a prerequisite course of LING 7415 or PSYC 7415 or CSCI 7412 or EDUC 6506 (minimum grade B). Restricted to graduate students only.
Additional Information: Departmental Category: Experimental

PSYC 7536 (1-3) Personality and Social Psychology
Selected topics in the area of social-personality psychology. Students may register for more than one section of this course within the term and/or within their graduate career. These seminars may be on one of the following topics: stereotyping and prejudice, social neuroscience, person perception, social psychology and the self, health and social psychology, race and ethnic identity, or social cognition.
Repeatable: Repeatable for up to 8.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Social

PSYC 7663 (1) Intellectual Assessment Laboratory
Practice administration of common intellectual and neuropsychological tests.
Requisites: Requires corequisite courses of PSYC 7683. Restricted to graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 7683 (1-3) Intellectual Assessment, with Practicum, in Clinical Psychology
Focuses on administering and interpreting objective test commonly used in clinical psychology practice. Includes case study approach and direct clinical experience. Instructor consent required.
Repeatable: Repeatable for up to 8.00 total credit hours.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 7693 (3) Personality Measurement
Covers theory and basic applications of psychological assessment, with an emphasis on measurement theory and the assessment of psychopathology and personality. Instructor consent required.
Additional Information: Departmental Category: Clinical

PSYC 7703 (1-3) Seminar: Clinical Psychology
Selected topics in the area of clinical psychology. Instructor consent required.
Repeatable: Repeatable for up to 12.00 total credit hours. Allows multiple enrollment in term.
Requisites: Restricted to Psychology (PSYC) graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 7713 (1-3) Practicum in Clinical Psychology
Provides direct clinical experience for clinical graduate students only. Instructor consent required.
Repeatable: Repeatable for up to 18.00 total credit hours.
Requisites: Restricted to graduate students only.
Additional Information: Departmental Category: Clinical

PSYC 7775 (1) Topics in Cognitive Science
Reading of interdisciplinary innovative theories and methodologies of cognitive science. Students participate in the LCS Distinguished Speakers series that hosts internationally recognized cognitive scientists who share and discuss their current research. Session discussions include analysis of leading edge and controversial new approaches in cognitive science. Restricted to students enrolled in LCS Cognitive Science Academic Programs.
Equivalent - Duplicate Degree Credit Not Granted: CSCI 7772 and EDUC 7775 and LING 7775 and PHIL 7810 and SLHS 7775
Repeatable: Repeatable for up to 4.00 total credit hours.
Additional Information: Departmental Category: Experimental

PSYC 7793 (1-3) Child Assessment Practicum
Allows students who have already learned adult assessment measures to broaden their knowledge and skills in order to complete psychoeducational evaluations with children. The course covers the background of common childhood disorders, general testing strategies with children, and specific test administration.
Repeatable: Repeatable for up to 3.00 total credit hours.
Recommended: Prerequisite PSYC 7683.
Additional Information: Departmental Category: Developmental

PSYC 8991 (1-10) Doctoral Dissertation
All doctoral students must register for not fewer than 30 hours of dissertation credit as part of the requirements for the degree. For a detailed discussion of doctoral dissertation credit, refer to the Graduate School section.
Repeatable: Repeatable for up to 30.00 total credit hours.
Additional Information: Departmental Category: General