

2015 Fall Course Offerings

Cognitive Science

Director: Professor Barbara Malt



PSYC, COGS 090-10 The Seven Sins of Memory 4 credits (SS) Open to CAS freshmen only, Dean permission required
Professor Hubbach; M, W 12:45 - 2:00 p.m.

COGS, PSYC 117-10 Cognitive Psychology 4 credits (SS) Prerequisite: PSYC 001 or COGS 007

The architecture and dynamics of the human mind: How we acquire knowledge through perception, represent and activate it in memory, and use it to communicate, make decisions, solve problems, and reason creatively. Optional 1 credit recitation (PSYC 183) may accompany this course (recommended but not required for COGS majors.) May not be taken pass/fail. Professor O'Seaghda; T, R 1:10 - 2:25 p.m.

COGS 161-10 Supervised Research 2-4 credits (ND) Instructor permission required

Research under the direct supervision of a faculty member in the cognitive science program. Students must arrange the particular project with a faculty member before enrolling. Please see on-line schedule for specific CRNs.

COGS 301-10 Senior Project in Cognitive Science: Proposal 3 credits (ND) Program permission required

Senior year integration of the material from cognitive science begins with the proposal of a substantial review or research project spanning at least two cognitive science disciplines under the direction of a Cognitive Science faculty member. Please see on-line schedule for specific CRNs. Contact Professor Barbara Malt for permission.

COGS 361-10 Independent Research 2-4 credits (ND) Instructor permission required

Independent research in cognitive science with a faculty advisor. Students must arrange the particular project with a faculty advisor before enrolling. Please see on-line schedule for specific CRNs.

COGS 399-10 Senior Project in Cognitive Science: Thesis 3 credits (ND) Prerequisite: COGS 301. Program permission required

Research during senior year culminating in senior thesis advised by a member of the Cognitive Science faculty. Execution and written report of project proposed and approved in COGS 301. Theses submitted for honors will be evaluated by a committee of at least three cognitive science faculty. Please see on-line schedule for specific CRNs. Contact Professor Barbara Malt for permission.

Collateral Requirements

CSE 001-10 Breadth of Computing 2 credits (ND)

Broad overview of computer science, computer systems, and computer applications. Interactive Web page development. Includes laboratory. Not available to students who have taken CSE 012 or ENGR 010. Staff; T, R 7:55 - 9:10

CSE 002 Fundamentals of Programming 2 credits (ND)

Problem-solving and object-oriented programming using Java. Includes laboratory. No prior programming experience needed. Staff; Multiple sections offered – days and times vary

MATH 021 Calculus I (recommended) or MATH 051 Survey of Calculus 4 credits

Staff; Multiple sections offered – days and times vary

Language, Culture and Meaning Elective (Contact Program Director for additional options.)

COGS, MLL, ANTH 140-10 Introduction to Linguistics 4 credits (SS)

Relationship between language and mind; formal properties of language; language and society; how languages change over time. May not be taken pass/fail. Professor Lee; M, W 12:45 - 2:00 p.m.

PSYC 307-10 High Order Cognition 4 credits (SS) Prerequisite: PSYC 117, Psyc 176 or COGS 007. Department permission required

In depth exploration of selected areas of higher level cognition such as thinking and reasoning, metacognition, expertise, executive processes, language and thought. Professor Marsh; T, R 1:10 – 2:25 p.m.

Artificial Intelligence and Formal Models Electives (Contact Program Director for additional options.)

CSE 017-10 Programming and Data Structures 3 credits (MA)

Algorithmic design and implementation in a high level, object oriented language, such as Java. Classes, subclasses, recursion, searching, sorting, linked lists, trees, stacks, queues. Professor Femister

Section 10 - M, W, F 9:10 - 10:00 a.m.; Section 11 - M, W, 2:10 - 3:00 p.m.

CSE, MATH 261-10 Discrete Structures 3 credits (MA)

Topics in discrete structures chosen for their applicability to computer science and engineering. Sets, propositions, induction, recursion; combinatorics; binary relations and functions; ordering, lattices and Boolean algebra; graphs and trees; groups and homomorphisms.

Professor Skandera; M, W, F 3:10 - 4:00 p.m.

CSE 262-10 Programming Languages 3 credits (ND) *Prerequisites: CSE 017, CSC 017 or CSE 018*

Use, structure and implementation of several programming languages. **Professor Tan; T, R 9:20 - 10:35 a.m.**

PHIL, MATH 304-10 Axiomatic Set Theory 3-4 credits (MA)

A development of set theory from axioms; relations and functions; ordinal and cardinal arithmetic; recursion the orem; axiom of choice; independence questions. Consent of department chair. **Professor Stanley; M, W, F 10:10 - 11:00**

Cognition and Neuroscience Electives (Contact Program Director for additional options.)

ANTH 145-10 Human Evolution 4 credits (NS) *Pre-requisite ANTH 001 waived for COGS majors*

Principles of biological anthropology focusing on the evolution of the human species. Topics include evolutionary theory, nonhuman primate diversity and behavior, the relationship between biology and behavior in evolutionary terms, the hominid fossil record, and genetic variability among contemporary human populations. **Professor Gatewood; M, W, F 10:10 - 11:00 a.m.**

BIOS 121-10 Comparative/Integrative Biology for BIOS Minors 3 credits (NS) *Prerequisite: BIOS 115*

BIOS 120 without the lab. Can serve as a prerequisite for some advanced courses (with instructor's permission) for which BIOS 120 is also a prerequisite. Will NOT satisfy the CORE III requirement for biology, molecular biology, behavioral neuroscience or accelerated (combined-degree) programs in the health sciences. Must have non-major status. **Professor Itzkowitz; M, W, F 11:10 - 12:00 p.m.**

BIOS 365-10 Neurobiology of Sensory Systems 3 credits (ND) *Department permission required*

The fundamental features of sensory systems in a diverse array of animals. Focus on how nervous systems detect, compute, and internally represent aspects of the environment from the single cell to whole system level. Special attention to the way sensory processing influences how we think about the biological basis of perception and possible mechanisms for consciousness. **Professor Burger; T, R 7:55 - 9:10 a.m.**

BIOS 366-10 Diseases of the Nervous System 3 credits (NS) *Department permission required*

Neurobiological basis of CNS disorders, including affective, neurological and psychotic conditions. Emphasis on primary literature covering causes, diagnostic and treatment issues. **Professor Simon; W 1:10 - 4:00 p.m.**

BIOS 382-10 Endocrinology of Behavior 3 credits (NS)

Hormonal effects upon animal and human behavior. Emphasis on neuroendocrinology of steroid hormone involvement in reproductive behaviors.

Professor Schneider; T, R 1:10 - 2:25 p.m.

BIOS 385-10 Neurophysiology and Memory 3 credits (NS) *Prerequisite: BIOS 177 and PHY 013. Department permission required*

Lectures and seminars on mechanisms of neuronal communication, the ability of neuronal networks to store and retrieve information, cellular basis for memory. **Professor Haas; T 1:10 – 4:00 p.m.**

Graduate Minor and Certificate Courses

PSYC 403-10 Cognitive Psychology 3 credits *Restricted to graduate students, Instructor permission required*

Survey of theories and research in cognitive psychology.

Professor O'Seaghda; M 4:10 – 7:00 p.m.

COGS 405-10 Individual Study in Cognitive Science 1-6 credits (ND) *Instructor permission required*

Study of a topic not covered in regular course offerings. By arrangement with a consulting faculty member. May be repeated for credit.

Please see on-line schedule for specific CRNs.