The cognitive sciences provide a multidisciplinary study of the mind. Researchers in this field seek to understand such mental phenomena as perception, thought, memory, the acquisition and use of language, learning, concept formation, and consciousness. Research projects in the cognitive sciences may involve observing the development of mental skills in children, programming computers to engage in complex problem solving, or analyzing the nature of meaning. Methods include observation and analysis, model building, experimentation, and the computer simulation of mental structures and processes. Some investigators focus on relations between brain structures and behavior, some work with computer simulation, and others work at more abstract philosophical levels.

Degree Requirements for B.A. in Cognitive Science

For general university requirements, see Graduation Requirements (pages 20–23). Students majoring in cognitive sciences must complete 7 core courses and 5 additional courses (see below). Among the 5 additional courses, at least 3 and no more than 4 must be in a single area of concentration—linguistics, philosophy, psychology, or neuroscience.

Introductory Courses

Because the major is interdisciplinary, no single course introduces the full range of the subject. However, students who are interested in majoring in cognitive sciences should take one or more of the following courses during their first and second years: LING 200, PHIL 103, PSYC 101, or PSYC 203.
Honors Program

Students with a 3.5 GPA in cognitive sciences and 3.3 overall GPA may apply for the cognitive sciences honors program. Students in the honors program are expected to conduct an independent research project of either one or two semesters under the guidance of a member of the cognitive sciences faculty. Students who wish to enter this program should consult with prospective advisors during their junior year and submit a proposal by the end of the semester preceding the initiation of the project. Typically, this means submitting a proposal by the end of the junior year and beginning the project during the fall of the senior year. Proposals will be reviewed by both the supervisor and the program director. Students who undertake a two-semester project will be allowed to continue into the second semester only if their advisor judges that sufficient progress has been made during the first semester. At the end of a project, honors students are expected to submit a detailed final report to both their advisor and the program director and make an oral presentation. For more details, contact the program director.

Core Courses

The core courses are divided into seven groups. Majors must take one course from each group.

**Computer Science**
COMP 200  Elements of Computer Science
COMP 210  Introduction to Principles of Scientific Computation

**Psychology**
PSYC 203  Introduction to Cognitive Psychology

**Linguistics**
LING 200  Introduction to the Scientific Study of Language
LING 300  Linguistic Analysis

**Advanced Linguistics**
LING 306  Language and the Mind
LING 315  Semantics

**Philosophy**
PHIL 103  Philosophical Aspects of Cognitive Science
PHIL 312  Mathematical Logic
PHIL 305  Philosophy of Mind

**Advanced Psychology**
PSYC 351  Psychology of Perception
PSYC 362  Biopsychology

**Miscellaneous**
COMP 440  Artificial Intelligence
LING 317  Language and Computers
PSYC 430  Computational Modeling of Cognitive Processes (formerly cross-listed as CSCI 410)
PSYC 352  Formal Foundations of Cognitive Sciences

Additional Courses

Note: you may not use a single course to satisfy both a core course requirement and an additional course requirement.

**Cognitive Sciences**
CSCI 390  Supervised Research in Cognitive Science
CSCI 481  Honors Project
CSCI 482  Honors Project

**Computer Science**
COMP 200  Elements of Computer Science
COMP 210  Introduction to Principles of Scientific Computation
COMP 212  Intermediate Programming
COMP 440  Artificial Intelligence
COMP 450  Algorithmic Robotics
Linguistics
LING 200  Introduction to the Scientific Study of Language
LING 300  Linguistic Analysis
LING 301  Phonetics
LING 306  Language and the Mind
LING 311  Phonology
LING 315  Semantics
LING 317  Language and Computers
LING 402  Syntax and Computers
LING 403  Modern Linguistic Theory
LING 411  Neurolinguistics
LING 412  Language and Intelligence
LING 467  Computational Projects
LING 490  Discourse Analysis

Neuroscience
Many of the neuroscience courses are taught by Baylor College of Medicine faculty. For more information, see http://www.ruf.rice.edu/~neurosci/.

BIOS 421  Neurobiology
ELEC 481  Fundamentals of Systems Physiology and Biophysics
LING 411  Neurolinguistics
PSYC 362  Biopsychology
PSYC 432  Brain and Behavior (formally cross-listed as CSCI 420)
NEUR 500  Functional Neuroanatomy and Systems Neuroscience
NEUR 501  Cognitive Neuroscience I
NEUR 502  Cognitive Neuroscience II
NEUR 503  Molecular Neuroscience I and II
NEUR 504  Cellular Neurophysiology I and II
NEUR 505  Optical Imaging in Neuroscience
NEUR 506  Learning and Memory
NEUR 511  Integrative Neuroscience Core Course (first semester)

Philosophy
PHIL 103  Philosophical Aspects of Cognitive Science
PHIL 303  Theory of Knowledge
PHIL 305  Mathematical Logic
PHIL 312  Philosophy of Mind
PHIL 353  Philosophy of Language
PHIL 357  Incompleteness, Undecidability, and Computability

Psychology
PSYC 308  Memory
PSYC 309  Psychology of Language
PSYC 340  Research Methods
PSYC 351  Psychology of Perception
PSYC 352  Formal Foundations of Cognitive Science
PSYC 360  Thinking
PSYC 362  Biopsychology
PSYC 370  Introduction to Human Factors
PSYC 409  Methods in Human-Computer Interaction
PSYC 411  History of Psychology
PSYC 430  Computational Modeling of Cognitive Processes
PSYC 432  Brain and Behavior (formally cross-listed as CSCI 420)
PSYC 441  Human-Computer Interaction
PSYC 465  Olfactory Perception

Other Departments
ANTH 406  Cognitive Studies in Anthropology and Linguistics
ELEC 201  An Introduction to Engineering Design
ELEC 498  Introduction to Robotics
STAT 300  Model Building

See CSCI in the Courses of Instruction Section.