

# COGNITIVE SCIENCE

*Director: Hank Gorman*

The mission of the cognitive science program is to provide students in the minor with a faithful representation of the significant issues in cognitive science. Cognitive science is an interdisciplinary field of study which unites people from philosophy, psychology, mathematics, computer science, linguistics, and biology around the common theme of mind. Inquiry in the cognitive sciences involves questions of semantics; knowledge representation; ontology; the functional architecture of human mind; planning, search and control; natural language parsing; cognitive development; and natural and artificial intelligence.

A **minor in cognitive science** consists of:

## **Introduction to Cognitive Science (1 course)**

- \_\_\_\_\_ COG 120 Introduction to Cognitive Science
- \_\_\_\_\_ PSY 220 Introduction to Cognitive Psychology

## **Introduction to Formal Representation Systems (1 course)**

- \_\_\_\_\_ MATH 141 Discrete Mathematics
- \_\_\_\_\_ CS 201 Discrete Mathematics
- \_\_\_\_\_ PHIL 110 Modern Logic

## **Philosophical Background of Cognitive Science (1 course)**

- \_\_\_\_\_ PHIL 225 Early Modern Philosophy
- \_\_\_\_\_ PHIL 230 Contemporary Philosophy

## **Knowledge representation, intelligence, natural language parsing, and thinking from Computer Science, Philosophy, or Psychology emphasis (1 course)**

- \_\_\_\_\_ PHIL 306 Knowledge and Reality
- \_\_\_\_\_ PHIL 310 Mind and Language
- \_\_\_\_\_ PSY 355 Learning, Memory, and Cognition
- \_\_\_\_\_ CS 440 Artificial Intelligence

## **Elective from Computer Science, Philosophy, or Psychology emphasis (1 course)**

- \_\_\_\_\_ CS 410 Programming Languages
- \_\_\_\_\_ CS 412 Data Structures and Algorithms
- \_\_\_\_\_ PHIL 225 Early Modern Philosophy
- \_\_\_\_\_ PHIL 230 Contemporary Philosophy
- \_\_\_\_\_ PHIL 310 Mind and Language
- \_\_\_\_\_ PSY 215 Behavioral Neuroscience

**Total Credits Requirement = 5 course credits**

## **COURSES**

### **COGS 120 Cognitive Science**

Addresses some of the ways in which such varied disciplines as psychology, computer science, linguistics, philosophy, and mathematics ask questions about the nature of mind. Specific content varies, but may include aspects of philosophy of mind, knowledge representation, language processing, artificial intelligence, and neurophysiology. Often includes lab work in robotics and artificial intelligence programming.

### **COGS 294 Intermediate Student Research**

Intended for less experienced students to develop and execute a research project related to cognitive science, beyond the constraints of the normal classroom, suitable for public dissemination on or off campus under mentorship of a faculty member. Typically, this work results in a formal presentation, written work, or creative works. Course credit varies from 0-1.00. PREQ: Instructor permission required.

### **COGS 394/494 Advanced Student Research**

Intended for advanced students to develop and execute a research project related to cognitive science suitable for public dissemination under mentorship of a faculty member. Students are expected to present the results of their research in a public forum. Typically, this work results in a formal presentation, written work, or creative works. Course credit varies from 0-1.00. PREQ: Instructor permission required.