



# COGNITIVE SCIENCE

## B.A. IN COGNITIVE SCIENCE

Cognitive science brings the insights and methods of natural science, social science and some of the humanities to the study of the mind. Cognitive science programs have emerged in recent years in response to a call for an integrated approach that does not restrict the study of the mind to a single discipline. Most programs have been inherently interdisciplinary and centered on psychology, neuroscience, linguistics and/or computing. Our department's work is grounded in the fundamental cognitive sciences of neurobiology, neuroscience, psychology, biology and anthropology, but is unique in its special focus on human creativity and invention, particularly art and technology—the systems invented by human beings to guide their thought and action both individually and culturally.

The cognitive science department teaches core disciplines, including cognitive neuroscience, experimental cognitive psychology and a range of philosophical, evolutionary, linguistic and computational theories of the mind. The program encourages students to develop wide-ranging expertise, cutting across at least two or three relevant disciplines.

At Case there is an added dimension, evident in the fourth required course in the core program, which leans heavily in the direction of the visual arts, music, drama and literature. The resources of art and humanities programs across the College of Arts and Sciences and also those of several eminent arts-related institutions in the University Circle community will be collaborating with this program.

The focus is not intended to teach students to be creative; rather is to subject the process of creativity and innovation to scientific analysis and study the neural, cognitive and social sources of innovation and creative thought. It is important to do this for two reasons: (1) because innovation makes culture possible and drives it forward; and (2) because innovation can sometimes move too fast, creating instability and social breakdown.

## DEGREE REQUIREMENTS AND COURSE OFFERINGS

The major in cognitive science requires a minimum of 30 credits in cognitive science and approved related coursework: 15 credit hours in the foundation component and 15 hours of elective coursework. We recommend that majors complete their foundation coursework by the end of their third year.

### Foundation courses

All majors must successfully complete all of the following core courses:

- COGS 101 Introduction to Cognitive Science I
- COGS 102 Introduction to Cognitive Science II
- COGS 201 Human Cognition in Evolution and Development
- COGS 202 Human Cognition from a Cultural Perspective
- PSCL 282 Quantitative Methods in Psychology III or equivalent, particularly ANTH 319 or STAT 201

### Electives

All majors must successfully complete five courses from the list below. Courses not listed here may also serve to fulfill the elective requirements, subject to approval by the department chair.

At least three of these courses must be at the 200- or 300 level. Some of these courses have additional prerequisites that may not count toward the requirements of the major. While students may enroll in up to six credits of independent study in cognitive science (COGS 397), only three of these credits may count toward the elective component of the major.

- ANTH 102 Being Human: An Introduction to Social and Cultural Anthropology
- ANTH 103 Introduction to Human Evolution
- ANTH 220 Language, Culture and Communication
- ANTH 367 Topics in Evolutionary Biology
- ANTH 371 Culture, Behavior and Person
- BIOL 225 Evolution
- BIOL 302 Human Learning and the Brain
- COGS 301 Topics in Cognitive Science
- COGS 397 Independent Study in Cognitive Science\*
- COSI 228 Introduction to Mass Communication
- COSI 313 Language Development

- ENGL 301 Linguistic Analysis
- ENGL 379 Topics in Language Studies
- HIST 203 Natural Philosophy
- PHIL 306 Mathematical Logic and Model Theory
- PHIL 365 Philosophy of Mind
- PSCL 352 Physiological Psychology
- PSCL 353 Psychology of Learning
- PSCL 355 Sensation and Perception
- PSCL 357 Cognitive Psychology
- PSCL 370 Human Intelligence

### Minor

The minor program in cognitive science will offer many students at Case a valuable additional option in planning students' undergraduate studies; a degree in cognitive science, even as a minor, will broaden the choices available to students when they graduate. The minor option will also allow students who want to study quite disparate fields—for instance, music and cognition—a better opportunity to acquire the necessary background. The minor program will require students to take two of the four courses in our core program (six credits): COGS 101 (Introduction to Cognitive Science), and one of COGS 102, 201 or 202. In addition, students will also take three COGS courses at the 200 or 300 level (nine credits) for a total of 15 credits. This will provide a good basic grounding in the field, and allow students to narrow the exposure to the aspects of the field most relevant to students' other academic interests, if desired. Individual programs will be developed in consultation with the adviser.

### RECENT GRADUATES

Preparation in cognitive science proves useful for a variety of possible careers. Students who wish to pursue a postgraduate degree will have several fields to choose from. Those who enter the workforce on graduation will also find that they have been well-served by this program; there is significant demand for university graduates that can combine a systematic science-oriented approach with the breadth provided by expertise in the social sciences, arts and humanities.

A recent survey of post graduation plans among graduates of the College of Arts and Sciences found that 55 percent went on to graduate or professional school and the remainder pursued other plans.

#### FOR MORE INFORMATION

##### General Bulletin

[www.case.edu/bulletin](http://www.case.edu/bulletin)

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