

# COGNITIVE SCIENCE - DOCTOR OF PHILOSOPHY (PHD)

*The doctoral program in cognitive science is a second major that students earn in conjunction with a PhD in another discipline offered by a participating department.*

The Institute of Cognitive Science Academic Program includes a combined PhD degree between cognitive science and a core discipline, as well as a combined PhD plan of study tailored for students interested in cognitive neuroscience. These programs are administered by CU Boulder's Institute of Cognitive Science (ICS).

Graduate students in cognitive science are admitted to graduate programs in participating departments that have ICS faculty, and must meet the requirements for admission and degree completion in their home department.

Students wishing to attain a degree or certificate in cognitive science must formally apply to the director of academic programs of ICS. To be admitted, they must be a student affiliate of ICS, which requires being a graduate student in good standing in a member department, and they must be sponsored by an ICS faculty fellow. Students who enter the Graduate School without a master's degree may be admitted to the program upon completion of their first year of study; students with a master's degree may be admitted during their first year.

The degree and certificate programs in cognitive science require students to demonstrate acceptable performance in interdisciplinary coursework and courses outside their home department. The courses must be offered by the following departments: Computer Science; Education; Integrative Physiology; Linguistics; Philosophy; Information Science; Psychology and Neuroscience; Speech, Language, Hearing Sciences; Architecture and Planning; or a department in which there is an ICS faculty fellow.

Details about requirements for the degree and certificate programs can be obtained through the director of academic programs for ICS or by contacting the ICS main office.

## Requirements

### Combined PhD Requirements

Students must complete 30 credit hours of cognitive science courses, including 9 credit hours of required core courses and 21 credit hours of elective courses.

For more program information, visit the institute's Cognitive Science Combined PhD (<http://www.colorado.edu/ics/graduate-programs/cognitive-science-combined-phd/>) webpage.

### Required Courses and Credits

Code	Title	Credit Hours
<b>Core Cognitive Science Courses</b>		
PSYC 6200/ CSCI 6402/ EDUC 6504/ LING 6200/ PHIL 6310	Issues and Methods in Cognitive Science	3

PSYC/LING 7775/CSCI 7772/ EDUC 7775/SLHS 7775/PHIL 7810	Topics in Cognitive Science (two semesters, 1 credit per semester)	2
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PSYC 7415/ CSCI 7412/ EDUC 6506/ LING 7415/PHIL 7415	Cognitive Science Research Applications Seminar 1	2
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PSYC 7425/ CSCI 7422/ EDUC 6516/ LING 7425/PHIL 7425	Cognitive Science Research Applications Seminar 2	2
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### Elective Cognitive Science Courses

Twelve credit hours of courses outside the home department, including courses in at least two different departments outside the home department. Each course must be at least 2 credits.	12
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Two interdisciplinary courses from the list of ICS-approved interdisciplinary courses during the semester the course was taken.	6
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Additional elective courses to complete the 30-credit-hour requirement.	3
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<b>Total Credit Hours</b>	<b>30</b>
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For a list of available elective courses, visit the institute's Course Catalog (<http://www.colorado.edu/ics/graduate-programs/course-catalog/>) webpage.

### Interdisciplinary Thesis

The original contributions of the dissertation research should exploit state-of-the-art methods from the perspective of at least two disciplines. Students are encouraged to have their doctoral research co-supervised by two ICS fellows representing different disciplines.

### Dissertation

Students must complete 30 hours of dissertation research.

### Triple PhD Requirements

Students must complete 28–34 credit hours, including 11–14 credit hours of required core courses, 6–9 credit hours of depth courses and at least 11 credit hours of courses in a related discipline specialization. For a list of specific available courses, visit the institute's Course Catalog (<http://www.colorado.edu/ics/graduate-programs/course-catalog/>) webpage.

For more information, visit the institute's Cognitive Neuroscience Combined PhD (<http://www.colorado.edu/ics/graduate-programs/cognitive-neuroscience-combined-phd/>) webpage.

### Comprehensive Examination

In accordance with the graduate school requirements, students will be required to take a comprehensive exam, which they must pass in order to advance to doctoral candidacy status. Successful completion (grade of B- or better) of the Introduction to Neuroscience I (NRSC 5100) and Introduction to Neuroscience II (NRSC 5110) courses will fulfill the neuroscience component of the comprehensive exam.

In addition, the student must pass a comprehensive exam in their area of specialization. The format of this specialty comprehensive exam will be determined by the student's advisor and will be appropriate for the advisor's department/program of affiliation, but must also be

interdisciplinary in nature to fulfill the cognitive science component of the comprehensive exam.

### Thesis

All cognitive neuroscience PhD students will be required to complete a doctoral thesis with a primary cognitive neuroscience focus. The thesis/dissertation will represent original state-of-the art research of quality suitable for publication in a reputable scientific journal. The student's thesis advisor must be a participating faculty member of the cognitive neuroscience faculty. In addition, the student's thesis committee must include at least one additional neuroscience faculty member and one cognitive science faculty member from outside the student's area of specialization. In accordance with the requirements of the Graduate School, the student's committee must be comprised of a minimum of five faculty members that have graduate faculty appointments. The committee will be formed by the student's advisor, upon approval of the slate of members by the academic directors of the neuroscience and cognitive science combined PhD programs.

- Education
- Architecture and Planning

Students interested in the combined PhD with cognitive science and neuroscience must meet course and thesis requirements. The student's thesis advisor must be a participating faculty member of the cognitive neuroscience faculty. To enroll in this triple degree, you must enroll in the neuroscience program and the cognitive science program.

For more information, visit the institute's Cognitive Neuroscience Combined PhD (<http://www.colorado.edu/ics/graduate-programs/cognitive-neuroscience-combined-phd/>) webpage.

## Learning Outcomes

By the completion of the program, student will be able to:

### Dual Degree Program

#### Cognitive Science Combined PhD

Graduate students in good standing in one of the following participating academic units may apply to earn a combined PhD with cognitive science:

- Psychology and Neuroscience
- Philosophy
- Computer Science
- Linguistics
- Speech, Language, and Hearing Sciences
- Education
- Integrative Physiology
- Architecture and Planning
- Information Science

Earning such a degree can significantly enhance a student's academic knowledge and career choices. Review the course requirements, application for admission and program completion checklist for further information.

For more information, visit the institute's Cognitive Science Combined PhD (<http://www.colorado.edu/ics/graduate-programs/cognitive-science-combined-phd/>) webpage.

### Triple Degree Program

#### Cognitive Neuroscience Combined PhD

Graduate students in good standing in one of the following participating academic units may apply to earn a combined PhD with cognitive science, neuroscience and their core discipline:

- Psychology and Neuroscience
- Philosophy
- Computer Science
- Linguistics
- Speech, Language and Hearing Sciences