Duluth Campus

Cognitive Science Minor

Philosophy

College of Arts, Humanities and Social Sciences

- Program Type: Undergraduate free-standing minor
- Requirements for this program are current for Fall 2016
- Required credits in this minor: 18

Cognitive Science is the interdisciplinary attempt to understand the mind, especially the human mind (with the prospect of creating artificial minds coming in a close second).

Understanding the mind and intelligence has long been a goal that seemed out of reach. The mind, consciousness, intelligence, and the related phenomena have been addressed by researchers in many areas including philosophy, psychology, linguistics, medicine, neuroscience, and artificial intelligence. These disciplines have very different histories and at universities are often separated by distance and academic culture. However, in the past 30 years, there has been a convergence of these disciplines on a few research paradigms: computational models of perception and reasoning, connectionism, and embodied cognition. It is now possible to form a more complete understanding of minds by drawing on contributions from all these disciplines, and a great deal of progress has been made. This has led to the rise at many universities of interdisciplinary programs in Cognitive Science. The programs exploit the insights that come from a variety of disciplinary approaches to understanding a single phenomenon: cognition.

More specifically, Cognitive Science aims to understand the nature and development of such intelligent capacities as consciousness, perception, information processing, language acquisition and processing, planning, reasoning, learning, representation and use of knowledge, and problem-solving, whether these capacities are realized in biological or artificial systems. The Cognitive Science Minor looks to the theoretical foundations, the substantive empirical results, and the methodological tools of the contributing disciplines of Linguistics, Computer Science, Philosophy and Psychology. The hope of Cognitive Science is that by combining the methods and results of all these branches, we will be able to provide a global understanding of the mind, how it works, and why it works that way.

Graduates of the minor program will be prepared for study in one of the many recently developed graduate Cognitive Science programs (including the Ph.D. offered at the Center for Cognitive Science at the University of Minnesota, Twin Cities) as well as graduate study in related programs such as cognition, brain, and behavior, cognitive neuroscience, artificial intelligence, and human-computer interaction. Those who choose to study the law, a path frequently chosen by philosophy majors, will be well suited for legal practice concerned with the variety of legal complexities associated with the development of these new technologies.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements

A GPA above 2.0 is preferred for the following:

- 3.00 already admitted to the degree-granting college
- 3.00 transferring from another University of Minnesota college

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Minor Requirements

Core Requirement (3 cr)

PHIL 1025 - Introduction to Cognitive Science [NAT SCI] (3.0 cr)

Required Electives (15 cr)

Five courses across the listed subject areas, with the following stipulations:
Two courses maximum may come from any one listed subject area.
For the purposes of the minor: Computer Science (CS), Electrical Engineering (EE), Industrial Engineering (IE) and Mechanical Engineering (ME) will be considered as a single subject.
Students are advised to review course pre-requisites for upper-division electives.

Computer Science

Take no more than 2 course(s) from the following:

- CS 5222 - Artificial Intelligence (4.0 cr)
- CS 5232 - Introduction to Machine Learning and Data Mining (4.0 cr)

Information current as of March 29, 2024

•CS 5242 - Natural Language Processing (4.0 cr)

Linguistics

Take no more than 2 course(s) from the following:

•LING 1811 - Introduction to Linguistics [LE CAT2, LOGIC & QR] (3.0 cr)
•LING 3102 - Syntax (3.0 cr)
•LING 3103 - Semantics and Pragmatics (3.0 cr)
•LING 4103 - Morphology: Word Structures and Rules (3.0 cr)
•LING 5400 *{Inactive}*(3.0 cr)

Philosophy

Take no more than 2 course(s) from the following:

•PHIL 1018 - Logic [LE CAT2, LOGIC & QR] (4.0 cr)
•PHIL 2011 - Philosophy of Language [LE CAT3, SOC SCI] (3.0 cr)
•PHIL 3570 - Philosophy of Psychology (4.0 cr)

Psychology

Take no more than 2 course(s) from the following:

•PSY 3061 - Physiological Psychology (4.0 cr)
•PSY 3520 - Introduction to Industrial/Organizational Psychology (3.0 cr)
•PSY 3611 - Learning and Behavior (3.0 cr)
•PSY 3613 - Applied Behavior Analysis and Behavior Change (3.0 cr)
•PSY 3621 - Cognition (3.0 cr)
•PSY 3661 - Psychology of Language (3.0 cr)
•PSY 3697 - Sensation and Perception (4.0 cr)
•PSY 5130 - Evolutionary Psychology (3.0 cr)