Twin Cities Campus

Cognitive Science M.S.

CLA Dean's Office

College of Liberal Arts

Link to a list of faculty for this program.

Contact Information:
Center for Cognitive Sciences
205 Elliott Hall
75 E. River Parkway
Minneapolis, MN 55455
Email: cogsci@umn.edu
Website: http://www.cogsciphd.umn.edu

- Program Type: Master's
- Requirements for this program are current for Spring 2023
- Length of program in credits: 30
- This program does not require summer semesters for timely completion.
- Degree: Master of Science

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

The MS Cognitive Science program is structured to allow students the flexibility to pursue a wide variety of research topics, and to integrate methodologies and perspectives from different disciplines. In addition to a course that introduces students to the field of Cognitive Science, at least three course credits from each of the following areas are required: cognitive psychology, computer science/artificial intelligence, linguistics, neuroscience, and philosophy.

Program Delivery

This program is available:

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

Prerequisites for Admission

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

Plan A: Plan A requires 20 major credits, 0 credits outside the major, and 10 thesis credits.The final exam is written and oral.

Plan B: Plan B requires 24 major credits and 0 credits outside the major.The final exam is written and oral. A capstone project is required.
Capstone Project: 6 Independent Study (Plan B) project credits are required.

Plan C: Plan C requires 30 major credits and 0 credits outside the major.The is no final exam.

This program may be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 2.8 is required for students to remain in good standing.

Introduction Course (3 credits)

Take the following course. A substitute course can be applied to this requirement with the approval of the director of graduate studies.
PSY 8042 - Proseminar in Cognition, Brain, and Behavior (3.0 cr)

Electives (17 to 27 credits)

All students must select at least 3 credits from each of the following 5 core disciplines for a total of 15 credits. Plan A students choose

an additional 2 credits, Plan B students an additional 6 credits, and Plan C students an additional 12 credits from this list to meet the 30-credit minimum. Substitute coursework can be applied to this requirement with the approval of the advisor and director of graduate studies.

Cognitive Psychology (3 credits)

CPSY 8301 - Developmental Psychology: Cognitive Processes (4.0 cr)
EPSY 5114 - Psychology of Student Learning (3.0 cr)
EPSY 8112 - Mathematical Cognition (3.0 cr)
EPSY 8116 - Reading for Meaning: Cognitive Processes in the Comprehension of Texts (3.0 cr)
EPSY 8118 - Advanced Cognitive Psychology (3.0 cr)
PSY 5014 - Psychology of Human Learning and Memory (3.0 cr)
PSY 5015 - Cognition, Computation, and Brain (3.0 cr)
PSY 5031W - Perception [WI] (3.0 cr)
PSY 5054 - Psychology of Language (3.0 cr)
PSY 5062 - Cognitive Neuropsychology (3.0 cr)
PSY 5064 - Brain and Emotion (3.0 cr)
PSY 8010 - Advanced Topics in Learning (3.0 cr)
PSY 8036 - Topics in Computational Vision (3.0 cr)
PSY 8041 - Proseminar in Perception (3.0 cr)
PSY 8055 - Seminar: Cognitive Neuroscience (3.0 cr)
PSY 8201 - Social Cognition (3.0 cr)

Computer Science (3 credits)

CSCI 5115 - User Interface Design, Implementation and Evaluation (3.0 cr)
CSCI 5127W - Embodied Computing: Design & Prototyping [WI] (3.0 cr)
CSCI 5421 - Advanced Algorithms and Data Structures (3.0 cr)
CSCI 5511 - Artificial Intelligence I (3.0 cr)
CSCI 5521 - Machine Learning Fundamentals (3.0 cr)
CSCI 5525 - Machine Learning: Analysis and Methods (3.0 cr)
CSCI 5561 - Computer Vision (3.0 cr)
CSCI 5609 - Visualization (3.0 cr)
CSCI 5619 - Virtual Reality and 3D Interaction (3.0 cr)
CSCI 8115 - Human-Computer Interaction and User Interface Technology (3.0 cr)
CSCI 8551 - Intelligent Agents (3.0 cr)

Linguistics (3 credits)

Please note LING 8900 may be used depending on the specific topic taken.
LING 5001 - Introduction to Linguistics (4.0 cr)
LING 5201 - Syntactic Theory I (3.0 cr)
LING 5202 - Syntactic Theory II (3.0 cr)
LING 5205 - Semantics (3.0 cr)
LING 5206 - Linguistic Pragmatics (3.0 cr)
LING 5207 - Advanced Semantics (3.0 cr)
LING 5801 - Introduction to Computational Linguistics (3.0 cr)
LING 8200 - Topics in Syntax and Semantics (3.0 cr)
LING 8210 - Seminar in Syntax (3.0 cr)
LING 8900 - Seminar: Topics in Linguistics (3.0 cr)
LING 8921 - Seminar in Language and Cognition (3.0 cr)

Neuroscience (3 credits)

NSC 5461 - Cellular and Molecular Neuroscience (3.0 cr)
NSC 5561 - Systems Neuroscience (4.0 cr)
NSC 5661 - Behavioral Neuroscience (2.0 cr)
NSC 8217 - Systems and Computational Neuroscience (2.0 cr)
NSCI 5551 - Statistical Foundations of Systems Neuroscience (3.0 cr)

Philosophy (3 credits)

PHIL 5085 *{Inactive}*(3.0 cr)
PHIL 5331 - Contemporary Moral Theories (3.0 cr)
PHIL 5615 - Mind, Bodies and Machines (3.0 cr)
PHIL 8131 - Epistemology Survey (3.0 cr)
PHIL 8180 - Seminar: Philosophy of Language (3.0 cr)
PHIL 8602 - Scientific Representation and Explanation (3.0 cr)
PHIL 8620 - Seminar: Philosophy of the Biological Sciences (3.0 cr)
PHIL 8670 - Seminar: Philosophy of Science (3.0 cr)

Plan Options

Plan A

All Plan A students must take at least 10 master's thesis credits.
CGSC 8777 - Thesis Credit: Masters (1.0 - 10.0 cr)

-OR-

Plan B

All Plan B students must take 6 credits of the following:
CGSC 8991 - Independent Study (1.0 - 4.0 cr)