# COGNITIVE SCIENCE, MASTER OF ARTS

https://cogsci.jhu.edu/graduate/ma-program/

The Department of Cognitive Science's one-year Master of Arts program is designed to flexibly provide graduate-level training to a wide range of students with diverse backgrounds and interests. This program is intended to appeal to students who have undergraduate degrees in linguistics, psychology, computer science, neuroscience, and other subdisciplines of cognitive science. It may be of particular interest to students who wish to strengthen their qualifications for a PhD program or a career in which an MA in cognitive science would make them more competitive.

A student in the MA program chooses to pursue either the research track or the course track. For both tracks, the student works closely with a faculty mentor throughout the program.

The MA in cognitive science allows students to develop research-oriented expertise needed to pursue a PhD at another institution or research-centered employment, and provides interdisciplinary education beyond the undergraduate level that will be useful for careers related to cognitive science.

There are many career opportunities open to those with advanced degrees in cognitive science and related fields. Outside of academia, these include positions in lab management, grant and technical writing, market research and consulting, computational linguistics, and human-computer interaction (e.g., work on automatic language production and recognition systems).

Please note that the MA program is not a pathway into the department's PhD program. They are separate and distinct programs. Students in most cognitive science PhD programs generally earn an MA/MS degree on the way to a PhD, but most of the cognitive science departments in the U.S. do not offer stand-alone MA degrees. Few programs can provide pre-PhD training beyond the undergraduate level. The cognitive science MA program is a preparation for those wishing to pursue doctoral studies in a related field or to gain a competitive edge in the job market.

## Financial Support

No regular funding is provided to students in the MA program, though a one-year (Spring and Fall only) 50% reduction in tuition is offered to students with JHU bachelors degrees. Students may seek funding from other sources.

### General Information

- Courses may not be double-counted. Each course may only be used to satisfy a single degree requirement, even if it may qualify for more than one requirement.
- All courses must be completed with a grade of B- or better, with the exception of the following courses for which a P (passing) grade will be accepted (where P = C- or better):
  - AS.360.625 Responsible Conduct of Research (RCR)
  - Graduate courses in other departments only offered as Pass/Fail with the written approval from the mentor and Director of Graduate Studies.
- One Cognitive Science course may be converted to Pass/Fail with written approval from the instructor, mentor, and Director of Graduate Studies.
- The majority of requirements must be completed in the spring and fall semesters. Only RCR and departmental independent research and readings courses are offered year-round.
- Enrolling in any intersession or summer course besides AS.360.625 Responsible Conduct of Research, AS.050.800 Directed Readings in Cognitive Science, and AS.050.839 Research in Cognitive Science may incur additional tuition charges.

### Course Track Requirements

| Code | Title | Credits |
|---|---|---|
| **Coursework** | | **21** |
| Seven courses, 600-800-level [1,2] | | |
| **Lab or Research Seminars** | | **3-4** |
| Two courses, 800-level [2] | | |
| **Directed Readings and/or Research** | | **9** |
| Independent research and/or readings courses, including one during Intersession and one during Summer. The mentor determines the distribution of 9 credits. | | |
| AS.050.800 | Directed Readings in Cognitive Science | |
| AS.050.839 | Research in Cognitive Science | |
| **Research Ethics** | | **0.5** |
| AS.360.625 | Responsible Conduct of Research | |
| **Capstone: Portfolio and Oral Exam** | | |
| The portfolio should include accomplishments from the program (e.g. course assignments, seminar papers, etc.) overseen by the faculty mentor, a reading list, and a set of discussion questions. Student will present what has been learned while in the program at an oral presentation supervised by two faculty members. | | |

[1]   Up to four courses may be substituted with written permission of both the mentor and Director of Graduate Studies.

[2]   May not include independent research or readings courses (e.g. AS.050.800 and AS.050.839).

### Research Track Requirements

| Code | Title | Credits |
|---|---|---|
| **Formal Methods or Statistics Course** | | **3-4** |
| One of the following or equivalent with mentor's written permission: | | |
| AS.200.657 | Advanced Statistical Methods | |
| AS.050.670 | Mathematical Models of Language | |
| AS.050.671 | Bayesian Inference | |
| AS.050.672 | Foundations of Neural Network Theory | |
| **Lab or Research Seminar** | | **3-4** |
| Two courses, 800-level [1] | | |
| **Additional Courses** | | **6-10** |
| Three courses, 600-800-level [1] | | |
| **Research** | | **18** |
| Student must work on full-time research overseen by their faculty mentor(s). Student registers in this course once each term: fall, intersession, spring and summer. The mentor determines the distribution of 18 credits across each term. | | |
| AS.050.839 | Research in Cognitive Science (x4) | |
| **Research Ethics** | | **0.5** |

AS.360.625  Responsible Conduct of Research

**Capstone: Research Paper and Oral Defense**

Student must produce and defend a mentor-approved research paper before two faculty members.

[1] May not include independent research or readings courses (e.g. AS.050.800 or AS.050.839).

## Sample Programs

The MA program is a full-calendar-year program. Below is an approximation of a typical course schedule for a student beginning in the summer term.

### Course Track
**First Year**

| First Term Fall | Credits | Second Term Intersession | Credits | Third Term Spring | Credits | Fourth Term Summer | Credits |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 600-level or above course | 3-4 | AS.050.8 | 3 | AS.050.8 | 3 | AS.050.8 | 3 |
| 600-level or above course | 3-4 | AS.360.625 | 0.5 | 600-level or above course | 3-4 | Portfolio due | |
| 600-level or above course | 3-4 | | | 600-level or above course | 3-4 | Oral presenta | |
| 600-level or above course | 3-4 | | | 600-level or above course | 3-4 | | |
| 800-level research seminar | 1.5-2 | | | 800-level research seminar | 1.5-2 | | |
| | 13.5-18 | | 3.5 | | 13.5-17 | | 3 |

**Total Credits 33.5-41.5**

### Research Track
**First Year**

| First Term Fall | Credits | Second Term Intersession | Credits | Third Term Spring | Credits | Fourth Term Summer | Credits |
| --- | --- | --- | --- | --- | --- | --- | --- |
| AS.050.8 | 4 | AS.050.8 | 3 | AS.050.8 | 4 | AS.050.8 | 7 |
| AS.200.657 | 3 | AS.360.625 | 0.5 | 600-level or above course | 3-4 | Research paper due | |
| 600-level or above course | 3-4 | | | 600-level or above course | 3-4 | Oral defense | |
| 800-level research seminar | 1.5-2 | | | 800-level research seminar | 1.5-2 | | |
| | 11.5-13 | | 3.5 | | 11.5-14 | | 7 |

**Total Credits 33.5-37.5**

## Expected Learning Outcomes

The MA program aims to develop and extend the knowledge and research skills of individuals interested in pursuing a PhD in a field of cognitive science or gaining research-centered employment.

Students in the MA program will:

- Acquire a strong background in the empirical findings and theoretical frameworks of one or more areas of cognitive science
- Acquire and apply analytic and technical skills needed to critically evaluate research findings, and to communicate research findings orally and in writing
- Develop the ability to conduct original problem-centered and theory-driven research in the chosen areas of study
- Gain experience with and fully participate in a collaborative lab-based community of researchers from a wide range of backgrounds and fields.