COGNITIVE SCIENCE MAJOR

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement/) and the degree requirements of their home school.

Course | Title
--- | ---
COG_SCI 110-0 | Introduction to Cognitive Science
COMP_SCI 110-0 | Introduction to Computer Programming
or COMP_SCI 111-0 | Fundamentals of Computer Programming
STAT 202-0 | Introduction to Statistics
or PSYCH 201-0 | Statistical Methods in Psychology
COG_SCI 202-0 | Evaluating Evidence

1 required proseminar
COG_SCI 366-0 | Cognitive Science Proseminar

5 Theme courses, one from each of the five themes listed below.

Theme: Brains & Bodies
COG_SCI 210-0 | Language and the Brain
LING 250-0 | Sound Patterns in Human Language
MUS_THRY 251-0 | Intro to Music Cognition
NEUROSCI 326-0 | Neurobiology of Learning and Memory
PSYCH 221-0 | Introduction to Neuroscience

Theme: Learning over Lifetimes
COG_SCI 211-0 | Learning, Representation & Reasoning
PSYCH 228-0 | Cognitive Psychology
PSYCH 244-0 | Developmental Psychology

Theme: Models & Machines
COG_SCI 207-0 | Introduction to Cognitive Modeling
COMP_SCI 348-0 | Introduction to Artificial Intelligence
LING 260-0 | Formal Analysis of Words & Sentences
LING 334-0 | Introduction to Computational Linguistics
PHIL 225-0 | Minds and Machines
PHIL 325-0 | Philosophy of Mind

Theme: Reasoning & Rhetoric
LING 270-0 | Meaning
PHIL 255-0 | Theory of Knowledge
POLI_SCI 335-0 | Political Psychology
PSYCH 333-0 | Psychology of Thinking
PSYCH 373-0 | Decision Making

Theme: Collective Cognition
ANTHRPO 377-0 | Psychological Anthropology
COG_SCI 245-0 | Presenting Ideas & Data
LOC 214-0 | Culture and Cognition
LOC 308-0 | Redesigning Everyday Organizations
LOC 313-0 | Learning and Thinking in Organizations
PSYCH 344-0 | Cultural Psychology

4 Electives chosen from the Theme lists above or from the Electives listed below

- Of the 9 Theme and Elective courses (5 Theme courses plus 4 Electives) at least five must be at the 300-level or above. Other 300- and 400-level courses beyond those listed here may be counted as Electives with consent of the cognitive science adviser.

Electives

Students following the major requirements in this catalog year may choose any of the elective courses listed below regardless of academic area. Students following requirements in a prior catalog year should refer to that catalog for the required allocation of courses among designated advanced elective areas.

Elective Courses

Course | Title
--- | ---
ANTHRPO 360-0 | Language and Culture
ANTHRPO 361-0 | Talk as Social Action
ANTHRPO 389-0 | Ethnographic Methods and Analysis
BIOL_SCI 302-0 | Fundamentals of Neurobiology
CSD 301-0 | Anatomy and Physiology of the Vocal Mechanism
CSD 302-0 | Anatomy and Physiology of the Peripheral Hearing Mechanism
CSD 303-0 | Brain and Cognition
CSD 306-0 | Psychoacoustics
CSD 309-0 | Culture, Language and Learning
CSD 310-0 | Biological Foundations of Speech and Music
CSD 342-0 | Language and Cognition in Atypical Development
CSD 373-0 | Introduction to Learning Disabilities
CSD 376-0 | Diagnostic & Remedial Approaches for Children With Learning Problems
CSD 382-0 | Autism Spectrum Disorder
CSD 388-0 | Attention Deficit Disorder and Related Disorders
CSD 392-0 | Language Development and Usage
CSD 406-0 | Medical Aspects of Audiology
CSD 444-0 | Development and Disorders of Mathematics
CSD 457-0 | Language Science
COMP_SCI 325-1 | Artificial Intelligence Programming
COMP_SCI 337-0 | Natural Language Processing
COMP_SCI 338-0 | Practicum in Intelligent Information Systems
COMP_SCI 344-0 | Design of Computer Problem Solvers
COMP_SCI 349-0 | Machine Learning
COMP_SCI 371-0 | Knowledge Representation and Reasoning
COMP_SCI 372-0 | Designing & Constructing Models with Multi-Agent Language
ECON 330-0 | Behavioral Economics
LING 300-0 | Topics in Linguistics
LING 315-0 | Experimental Approaches to Word Form Processing
LING 316-0 | Experimental Syntax
LING 317-0 | Experimental Pragmatics
LING 321-0 | Bilingualism
LING 330-0 | Research Methods in Linguistics
LING 341-0 | Language Typology
LING 342-0 | Structure of Various Languages

• Independent study is strongly recommended. COG_SCI 399-0 or another independent study approved by the cognitive science adviser may count as an Elective course.

• For students pursuing honors, the second quarter Senior Thesis Seminar (COG_SCI 398-2) may count as an Elective course.

• At most 3 courses counted toward the cognitive science major may be double-counted toward another major. Courses used to meet major requirements may not be double-counted toward a minor.
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<td>LRN_SCI 425-0</td>
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<td>LRN_SCI 426-0</td>
<td>Design of Technological Tools for Thinking and Learning</td>
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<td>LRN_SCI 429-0</td>
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<td>PSYCH 325-0</td>
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<td>PSYCH 328-0</td>
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<td>PSYCH 466-0</td>
<td>Analog and Similarity</td>
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*Also relevant sections of:*

- ANTHRO 390-0 | Topics In Anthropology
- CSD 369-0 | Special Topics in Communication Sciences and Disorders
- COMP_SCI 396-0 | Special Topics in Computer Science
- LRN_SCI 451-0 | Topics in Learning Sciences
- MUS_THRY 335-0 | Selected Topics in Music Theory
- MUS_THRY 336-0 | Selected Topics in Music Cognition
- MUS_THRY 435-0 | Selected Topics in Music Theory
- MUS_THRY 436-0 | Selected Topics in Music Cognition
- PHIL 410-0 | Seminar: Special Topics in Philosophy
- PHIL 426-0 | Seminar in Philosophy of Mind
- PSYCH 391-0 | Advanced Seminar in Cognition or Neuroscience
- PSYCH 460-0 | Special Topics in Cognition
- PSYCH 470-0 | Topics in Brain, Behavior, and Cognition

### Honors in Cognitive Science

Majors with strong academic records and an interest in pursuing honors should contact the director of undergraduate studies in early spring of junior year. Qualifying students prepare a thesis proposal under the guidance of a faculty mentor and present the proposal, along with the names of the mentor and a second faculty reader, to the program committee for review. After committee approval of the proposal, students normally enroll in COG_SCI 398-1 Senior Thesis Seminar in fall and COG_SCI 398-2 Senior Thesis Seminar in winter of senior year. With the permission of the director of undergraduate studies, 1 quarter of COG_SCI 398-0 Independent Study may be substituted for one of either COG_SCI 398-1 Senior Thesis Seminar or COG_SCI 398-2 Senior Thesis Seminar.

Students whose projects, theses, and grades meet program criteria are recommended to the college for graduation with honors. For more information consult the director of undergraduate studies and see the section on *Honors in the Major* of the Weinberg Academic Options and Support (https://catalogs.northwestern.edu/undergraduate/arts-sciences/#academicoptionstext) page.