

# Cognitive Science

## Bachelor of Arts (BA)

Cognitive Science is the cross-disciplinary study of the structure and processes of human cognition and their computational simulation or modeling. This interdisciplinary program is designed to give students an understanding of questions dealing with human cognition, such as concept formation, visual perception, the acquisition and processing of natural language, and human reasoning and problem solving.

The program draws on relevant courses found within the fields of anthropology, biology, computer science, education, linguistics, philosophy, and psychology, as well as specially designed lower and upper division courses in cognitive science.

## Declaring the Major

For prerequisites required before declaring the major, please see the Major Requirements tab. Students interested in the major should consult <http://cogsci.berkeley.edu> and then schedule an appointment with the student academic adviser (<http://cogsci.berkeley.edu/make-advising-appointment>). The Cognitive Science office is located in 140 Stephens Hall.

## Honors Program

Cognitive Science majors who wish to graduate with honors must have an overall GPA of 3.30 or higher in all work completed at the University and a 3.30 GPA or higher in the major program at the time of graduation. In addition, they must complete a thesis of high quality, based upon independent study with a member of the Cognitive Science faculty and marked by satisfactory completion of at least three units in any of the following courses: COG SCI H195A, COG SCI H195B, or COG SCI 199.

Please visit the Cognitive Science Honors webpage for more information (<http://cogsci.berkeley.edu/honors>).

## Minor Program

There is no minor program in Cognitive Science.

In addition to the University, campus, and college requirements listed on the College Requirements tab, students must fulfill the following requirements specific to their major program.

## General Guidelines

1. All courses taken to fulfill major requirements must be taken for a letter grade.
2. A lower division requirement may be repeated one time only with the repeated grade being final. For all other groups, students may repeat courses one time only with the repeated grade being final.
3. All students must complete at least 30 upper division units.
4. A minimum grade point average (GPA) of 2.0 must be maintained in all courses used by the major and for upper division courses used by the major.
5. No more than two upper division courses may be used to simultaneously fulfill requirements in a double major. No more than one upper division course may be used to simultaneously fulfill requirements for a student's minor program, with the exception of minors offered outside of the College of Letters & Science.

6. Please note that COG SCI 198, COG SCI 199, COG SCI H195A, and COG SCI H195B may not be used to fulfill upper division requirements.

For information regarding all requirements outside the major, including breadth requirements, residence requirements and unit requirements, please see the College Requirements tab.

## Summary of Major Requirements

Lower division prerequisites: three courses	10-12
Additional lower division requirements: two courses	7
Upper division distribution requirements: six courses	18-24
Upper division electives: three courses	9-12
<b>Total Units</b>	<b>44-55</b>

## Lower Division Prerequisites

*Note: For students (freshmen and transfer) admitted to Berkeley Fall 2015 and later, a "C" grade or higher in each of the three prerequisite courses will be required for admission to the major. This is in addition to a 2.0 overall Berkeley GPA. For students (freshmen and transfer) admitted to Berkeley Spring 2015 and earlier, an average GPA of 2.0 or higher in the three prerequisites is required for admission to the major. This is in addition to a 2.0 overall Berkeley GPA.*

COG SCI 1	Introduction to Cognitive Science	3-4
or COG SCI N1	Introduction to Cognitive Science	
MATH 1A	Calculus (preferred)	3-4
or MATH 16A	Analytic Geometry and Calculus	
COMPSCI 61A	The Structure and Interpretation of Computer Programs	4
or ENGIN 7	Introduction to Computer Programming for Scientists and Engineers	

## Lower Division Requirements

MCELLBI C61	Brain, Mind, and Behavior	3
or MCELLBI C64	Exploring the Brain: Introduction to Neuroscience	
MATH 55	Discrete Mathematics	4
or COMPSCI 70	Discrete Mathematics and Probability Theory	

## Upper Division Distribution Requirements

Select one course from each of the following six areas. Courses that are listed within more than one area of concentration can be counted toward only one requirement.

### Cognitive Neuroscience

ANTHRO 107	Evolution of the Human Brain
COG SCI/ PSYCH C127	Cognitive Neuroscience
PSYCH 117	Human Neuropsychology
PSYCH 133	Psychology of Sleep

### Cognitive Psychology

COG SCI C100/ PSYCH C120	Basic Issues in Cognition
COG SCI C102/ PSYCH C129	Scientific Approaches to Consciousness

COG SCI/  
PSYCH C126 Perception

LINGUIS  
C146/  
PSYCH C143 Language Acquisition

PSYCH 122 Introduction to Human Learning and Memory

PSYCH 164 Social Cognition

### Computational Modeling

COG SCI 131 Computational Models of Cognition

COMPSCI 188 Introduction to Artificial Intelligence

### Linguistics

COG SCI  
C101/  
LINGUIS C105 The Mind and Language

COG SCI/  
LINGUIS  
C142 Language and Thought

COG SCI/  
LINGUIS  
C147 Language Disorders

LINGUIS 100 Introduction to Linguistic Science

### Philosophy

PHILOS 122 Theory of Knowledge

PHILOS 132 Philosophy of Mind

PHILOS 133 Philosophy of Language

PHILOS 135 Theory of Meaning

PHILOS 136 Philosophy of Perception

### Society, Culture, and Cognition

ANTHRO 166 Language, Culture, and Society

COG SCI  
C103/  
HISTORY C192/  
MEDIAS C104C/  
INFO C103 Course Not Available

COG SCI/  
LINGUIS  
C104 The Mind, Language, and Politics

ECON 119 Psychology and Economics

EDUC 140AC/  
W140/W140A The Art of Making Meaning: Educational Perspectives on Literacy and Learning in a Global World

LINGUIS 150 Sociolinguistics

PSYCH 107 Buddhist Psychology

PSYCH 160 Social Psychology

PSYCH 164 Social Cognition

PSYCH 166AC Cultural Psychology

SOCIOL 150 Social Psychology

## Upper Division Electives

In addition to completing the six distribution groups, students must complete at least three additional elective courses. Students may wish to focus elective options on an unofficial concentration, which would consist of three courses, all within one of the six Cognitive Science categories. Students who choose to concentrate should select at least two of their three electives from that area. These two within-area electives, together with that area's distribution requirement, comprise the concentration.

Concentrations are not recorded on the student's transcript or diploma, and progress toward their completion is not tracked by the student's adviser. Please see a Cognitive Science adviser if you have a question about focusing your electives on a particular area.

Select three courses from the following list:

ANTHRO 149 Psychological Anthropology

ANTHRO 160A Forms of Folklore

ANTHRO 161 Narrative Folklore

COG SCI  
C140/  
LINGUIS C160 Quantitative Methods in Linguistics

COMPSCI 160 User Interface Design and Development

COMPSCI 170 Efficient Algorithms and Intractable Problems

COMPSCI 186 Introduction to Database Systems

COMPSCI/VIS  
SCI C280 Computer Vision

COMPSCI 287 Advanced Robotics

COMPSCI 288 Natural Language Processing

EDUC 224A Mathematical Thinking and Problem Solving

EDUC C229A/  
PSYCH C223 Proseminar: Problem Solving and Understanding

INFO 146 Course Not Available

LINGUIS 106 Metaphor

LINGUIS 110 Introduction to Phonetics and Phonology

LINGUIS 115 Phonology and Morphology

LINGUIS 120 Introduction to Syntax and Semantics

LINGUIS 121 Logical Semantics

LINGUIS 123 Pragmatics

LINGUIS 125 Gesture, Cognition, and Culture

LINGUIS 130 Comparative and Historical Linguistics

LINGUIS/  
SLAVIC C139 Language Spread

LINGUIS 151 Language and Gender

LINGUIS 158 Computational Methods

LINGUIS 170 History, Structure, and Sociolinguistics of a Particular Language

LINGUIS 181 Lexical Semantics

MCELLBI 160 Cellular and Molecular Neurobiology

MCELLBI 160L Neurobiology Laboratory

MCELLBI 161 Circuit, Systems and Behavioral Neuroscience

MCELLBI 165 Neurobiology of Disease

MCELLBI 166 Biophysical Neurobiology

MEDIAS C101 Visual Communications

MEDIAS C102 Effects of Mass Media

MUSIC  
108/108M Music Perception and Cognition

MUSIC  
109/109M Music Cognition: The Mind Behind the Musical Ear

NATAMST 151 Native American Philosophy

PHILOS 128 Philosophy of Science

PHILOS 138 Philosophy of Society

PHILOS 140A Intermediate Logic

PHILOS 140B Intermediate Logic

PHILOS 176	Hume
PHILOS 178	Kant
PHILOS 185	Heidegger
PHILOS 186B	Later Wittgenstein
PHILOS 188	Phenomenology
POL SCI 161	Public Opinion, Voting and Participation
POL SCI 164A	Political Psychology and Involvement, Political Psychology and Public Policy
PSYCH 110	Introduction to Biological Psychology
PSYCH 114	Biology of Learning
PSYCH 121	Animal Cognition
PSYCH 125	The Developing Brain
PSYCH 167AC	Stigma and Prejudice
RHETOR 103A	Approaches and Paradigms in the History of Rhetorical Theory
RHETOR 103B	Approaches and Paradigms in the History of Rhetorical Theory II
RHETOR 110	Advanced Argumentative Writing
RHETOR 170	Rhetoric of Social Science
VIS SCI 265	Neural Computation

Undergraduate students in the College of Letters & Science must fulfill the following requirements in addition to those required by their major program.

For detailed lists of courses that fulfill college requirements, please review the College of Letters & Sciences (<http://guide.berkeley.edu/archive/2016-17/undergraduate/colleges-schools/letters-science>) page in this Guide.

## Entry Level Writing

All students who will enter the University of California as freshmen must demonstrate their command of the English language by fulfilling the Entry Level Writing requirement. Fulfillment of this requirement is also a prerequisite to enrollment in all reading and composition courses at UC Berkeley.

## American History and American Institutions

The American History and Institutions requirements are based on the principle that a US resident graduated from an American university should have an understanding of the history and governmental institutions of the United States.

## American Cultures

American Cultures is the one requirement that all undergraduate students at Cal need to take and pass in order to graduate. The requirement offers an exciting intellectual environment centered on the study of race, ethnicity and culture of the United States. AC courses offer students opportunities to be part of research-led, highly accomplished teaching environments, grappling with the complexity of American Culture.

## Quantitative Reasoning

The Quantitative Reasoning requirement is designed to ensure that students graduate with basic understanding and competency in math, statistics, or computer science. The requirement may be satisfied by exam or by taking an approved course.

## Foreign Language

The Foreign Language requirement may be satisfied by demonstrating proficiency in reading comprehension, writing, and conversation in a foreign language equivalent to the second semester college level, either by passing an exam or by completing approved course work.

## Reading and Composition

In order to provide a solid foundation in reading, writing and critical thinking the College requires two semesters of lower division work in composition in sequence. Students must complete a first-level reading and composition course by the end of their second semester and a second-level course by the end of their fourth semester.

## Breadth Requirements

The undergraduate breadth requirements provide Berkeley students with a rich and varied educational experience outside of their major program. As the foundation of a liberal arts education, breadth courses give students a view into the intellectual life of the University while introducing them to a multitude of perspectives and approaches to research and scholarship. Engaging students in new disciplines and with peers from other majors, the breadth experience strengthens interdisciplinary connections and context that prepares Berkeley graduates to understand and solve the complex issues of their day.

## Unit Requirements

- 120 total units, including at least 60 L&S units
- Of the 120 units, 36 must be upper division units
- Of the 36 upper division units, 6 must be taken in courses offered outside your major department

## Residence Requirements

For units to be considered in "residence," you must be registered in courses on the Berkeley campus as a student in the College of Letters & Science. Most students automatically fulfill the residence requirement by attending classes here for four years. In general, there is no need to be concerned about this requirement, unless you go abroad for a semester or year or want to take courses at another institution or through UC Extension during your senior year. In these cases, you should make an appointment to meet an adviser to determine how you can meet the Senior Residence Requirement.

Note: Courses taken through UC Extension do not count toward residence.

## Senior Residence Requirement

After you become a senior (with 90 semester units earned toward your BA degree), you must complete at least 24 of the remaining 30 units in residence in at least two semesters. To count as residence, a semester must consist of at least 6 passed units. Intercampus Visitor, EAP, and UC Berkeley-Washington Program (UCDC) units are excluded.

You may use a Berkeley Summer Session to satisfy one semester of the Senior Residence requirement, provided that you successfully complete 6 units of course work in the Summer Session and that you have been enrolled previously in the college.

## Modified Senior Residence Requirement

Participants in the UC Education Abroad Program (EAP) or the UC Berkeley Washington Program (UCDC) may meet a Modified Senior Residence requirement by completing 24 (excluding EAP) of their final 60 semester units in residence. At least 12 of these 24 units must be completed after you have completed 90 units.

## Upper Division Residence Requirement

You must complete in residence a minimum of 18 units of upper division courses (excluding EAP units), 12 of which must satisfy the requirements for your major.

## Mission

Cognitive Science is an interdisciplinary field of inquiry that is concerned with the acquisition, representation, and use of knowledge by individual minds, brains, and machines, as well as groups, institutions, and other social entities. Because the fundamental purpose of the University, as a social institution, is the preservation, generation, and transmission of knowledge, cognitive science speaks to the heart of the University's mission. By engaging faculty from psychology, philosophy, linguistics, computer science, neuroscience, and anthropology, sociology, and other social sciences in common purpose, cognitive science constitutes a microcosm of the University as a whole. Berkeley's Cognitive Science Program is almost unique in terms of the scope of our approach to the field.

Cognitive Science major students are expected to approach problems of knowledge using the tools of several different disciplines: philosophy, psychology, linguistics, computer science, neuroscience, and various social sciences. This expectation is reflected in a demanding curriculum that moves from a broad introductory survey course (COG SCI 1), to a six-course distribution requirement covering the philosophy of mind, cognitive psychology, linguistics, computational modeling and artificial intelligence, neuroscience, and various social sciences. After fulfilling their distribution requirement, students have the opportunity to concentrate further study in one of these six fields, and to complete an honors thesis.

## Learning Goals for the Major

By the end of their undergraduate careers, cognitive science majors are expected to understand and critically evaluate:

1. Research and theory in cognitive psychology, including perception, attention, learning, memory, reasoning, problem-solving, judgment, and decision-making.
2. Research and theory in linguistics, with special attention to the relation between language and thought.
3. Various approaches to artificial intelligence, and the computational modeling of cognitive processes.
4. The biological bases of cognitive functions, as uncovered by cognitive neuroscience.
5. Classic and contemporary work on the philosophy of mind, including the mind-body problem, mental causation, freedom of the will, and the nature of consciousness.
6. The sociocultural context of individual cognition, including the social construction and organization of knowledge, cultural differences in cognition, the history of information, etc.

## Skills

We also expect that students will have acquired the following skills for lifelong learning and effective citizenship:

1. Formulating a well-organized argument supported by evidence.
2. Effectively written, spoken, and graphical communication.
3. Problem-solving in cognitive science and its constituent fields.
4. Applying critical thinking skills in new and complex situations.
5. Using probability and statistics in reasoning.
6. Understanding the social implications of theory and research in cognitive science for responsible professional, civic, and ethical behavior.

## Graduate Study

Cognitive Science does not have a graduate program at UC, Berkeley. The cognitive science research community at Berkeley is centered around the Institute of Cognitive and Brain Sciences (<http://icbs.berkeley.edu>). Students interested in cognitive science graduate study can receive graduate training in programs in affiliated disciplines, e.g., psychology (<http://psychology.berkeley.edu>), linguistics (<http://linguistics.berkeley.edu>), neuroscience (<http://neuroscience.berkeley.edu>). There is presently no separate graduate program specifically for cognitive science. We are exploring the possibility of starting a cognitive science graduate program in the near future.

## Honors

Students with a 3.3 grade point average overall and in the upper division major courses may apply for admission to the honors program in their senior year. The awarding of honors is contingent upon submission of a thesis of high quality, based upon independent study with a member of the Cognitive Science faculty and marked by satisfactory completion of at least 3 and at most 6 units of course H195A, H195B or 199. Evaluation of the thesis is the responsibility of, first, the faculty supervisor and then of the second reader, both secured by the student. It is the responsibility of the supervisor and the second reader to decide (1) whether the thesis is of honors quality and (2) if of honors quality, which level of honors is to be assigned: Honors, High Honors, or Highest Honors. Please see the Cognitive Science program's Honors page for additional details. (<http://cogsci.berkeley.edu/honors>)

## Student Association

The Cognitive Science Student Association (CSSA) is a great resource for students interested in Cognitive Science. About the CSSA, from their website: *The CSSA regularly coordinates academic events such as guest lectures and information sessions; plans social events like professor-student dinners and cog sci themed gatherings; and works with cognitive science faculty and university officials to provide assistance for students. Additionally, the CSSA teaches its own decal on research methodology, has an academic outreach program, and organizes the annual California Cognitive Science Conference.* Click here to visit the CSSA website. (<http://cssa.berkeley.edu>)

## Cognitive Science

### COG SCI 1 Introduction to Cognitive Science 4 Units

Terms offered: Spring 2018, Spring 2017, Spring 2016

This course introduces the interdisciplinary field of cognitive science. Lectures and readings will survey research from artificial intelligence, psychology, linguistics, philosophy, and neuroscience, and will cover topics such as the nature of knowledge, thinking, remembering, vision, imagery, language, and consciousness. Sections will demonstrate some of the major methodologies.

Introduction to Cognitive Science: [Read More](#) [+]

#### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for Cognitive Science 1 after completing Cognitive Science N1 or Cognitive Science C1/Education C1. A deficient grade in Cognitive Science C1/Education C1 or Cognitive Science N1 may be removed by taking Cognitive Science 1.

#### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to Cognitive Science: [Read Less](#) [-]

### COG SCI 1B Introduction to Cognitive Science 3 Units

Terms offered: Fall 2017, Fall 2016

This course introduces the interdisciplinary field of cognitive science. Lectures and readings will survey research in such fields as artificial intelligence, psychology, linguistics, philosophy, and neuroscience, and will cover topics such as the nature of knowledge, thinking, remembering, vision, imagery, language, and consciousness.

Introduction to Cognitive Science: [Read More](#) [+]

#### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for N1 after taking Cognitive Science 1 or Cognitive Science C1/Education C1.

#### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Introduction to Cognitive Science: [Read Less](#) [-]

### COG SCI N1 Introduction to Cognitive Science 3 Units

Terms offered: Summer 2017 Second 6 Week Session, Summer 2016 First 6 Week Session, Summer 2016 Second 6 Week Session

This course introduces the interdisciplinary field of cognitive science. Lectures and readings will survey research in such fields as artificial intelligence, psychology, linguistics, philosophy, and neuroscience, and will cover topics such as the nature of knowledge, thinking, remembering, vision, imagery, language, and consciousness. Sections will demonstrate some of the major methodologies.

Introduction to Cognitive Science: [Read More](#) [+]

#### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for N1 after taking Cognitive Science 1 or Cognitive Science C1/Education C1.

#### Hours & Format

**Summer:** 6 weeks - 7.5 hours of lecture and 0 hours of laboratory per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Formerly known as:** C1

Introduction to Cognitive Science: [Read Less](#) [-]

### COG SCI 88 Data Science and the Mind 2 Units

Terms offered: Spring 2017, Fall 2016, Spring 2016

How does the human mind work? We explore this question by analyzing a range of data concerning such topics as human rationality and irrationality, human memory, how objects and events are represented in the mind, and the relation of language and cognition. This class provides students with critical thinking and computing skills that will allow them to work with data in cognitive science and related disciplines.

Data Science and the Mind: [Read More](#) [+]

#### Rules & Requirements

**Prerequisites:** This course is meant to be taken concurrently with Computer Science C8/Statistics C8/Information C8. Students may take more than one 88 (data science connector) course if they wish, ideally concurrent with or after having taken the C8 course

#### Hours & Format

**Fall and/or spring:** 15 weeks - 1 hour of laboratory, 0.5 hours of discussion, and 0.5 hours of lecture per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

Data Science and the Mind: [Read Less](#) [-]

### COG SCI 98 Directed Group Study 1 - 4 Units

Terms offered: Spring 2016, Spring 2015, Fall 2014

Seminar for the group study of selected topics. Topics may be initiated by students subject to the approval of the major advisor.

Directed Group Study: Read More [+]

#### Rules & Requirements

**Credit Restrictions:** Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

**Repeat rules:** Course may be repeated for credit.

#### Hours & Format

**Fall and/or spring:** 15 weeks - 1-4 hours of directed group study per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Directed Group Study: Read Less [-]

### COG SCI 99 Supervised Independent Study and Research 1 - 4 Units

Terms offered: Spring 2011, Fall 2010

Independent study and research by arrangement with faculty.

Supervised Independent Study and Research: Read More [+]

#### Rules & Requirements

**Prerequisites:** Restricted to freshmen and sophomores; consent of instructor

**Repeat rules:** Course may be repeated for credit.

#### Hours & Format

**Fall and/or spring:** 15 weeks - 3-12 hours of independent study per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Supervised Independent Study and Research: Read Less [-]

### COG SCI C100 Basic Issues in Cognition 3 Units

Terms offered: Fall 2016, Fall 2015, Spring 2015

Theoretical foundations and current controversies in cognitive science will be discussed. Basic issues in cognition--including perception, imagery, memory, categorization, thinking, judgment, and development--will be considered from the perspectives of philosophy, psychology, computer science, and physiology. Particular emphasis will be placed on the nature, implications, and limitations of the computational model of mind.

Basic Issues in Cognition: Read More [+]

#### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for C120 after taking 120A.<BR/>Students will receive no credit for Psychology C120 after taking Psychology N120. A student who receives a failing grade in PSYCH N120 is eligible to take PSYCH C120 in order to remove the deficient grade in lieu of repeating PSYCH N120.

#### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 1 hour of discussion per week

#### Summer:

6 weeks - 5 hours of lecture and 2.5 hours of discussion per week

8 weeks - 3.5 hours of lecture and 2 hours of discussion per week

#### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** PSYCH C120

Basic Issues in Cognition: Read Less [-]

## COG SCI N100 Basic Issues in Cognition 3 Units

Terms offered: Summer 2017 Second 6 Week Session

Theoretical foundations and current controversies in cognitive science will be discussed. Basic issues in cognition--including perception, imagery, memory, categorization, thinking, judgment, and development--will be considered from the perspectives of philosophy, psychology, computer science, and physiology. Particular emphasis will be placed on the nature, implications, and limitations of the computational model of mind.

Basic Issues in Cognition: [Read More \[+\]](#)

### Rules & Requirements

**Credit Restrictions:** Students will receive no credit for Psychology N120 after taking Psychology C120. A student who receives a failing grade in PSYCH c120 is eligible to take PSYCH N120 in order to remove the deficient grade in lieu of repeating PSYCH C120.

### Hours & Format

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** PSYCH N120

Basic Issues in Cognition: [Read Less \[-\]](#)

## COG SCI C101 The Mind and Language 4 Units

Terms offered: Summer 2017 8 Week Session, Summer 2016 10 Week Session, Summer 2016 8 Week Session, Spring 2016

Conceptual systems and language from the perspective of cognitive science. How language gives insight into conceptual structure, reasoning, category-formation, metaphorical understanding, and the framing of experience. Cognitive versus formal linguistics. Implications from and for philosophy, anthropology, literature, artificial intelligence, and politics.

The Mind and Language: [Read More \[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

**Summer:** 8 weeks - 6 hours of lecture and 1.5 hours of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructors:** G. Lakoff, E. Sweetser

**Formerly known as:** 105

**Also listed as:** LINGUIS C105

The Mind and Language: [Read Less \[-\]](#)

## COG SCI C102 Scientific Approaches to Consciousness 3 Units

Terms offered: Fall 2014, Spring 2013, Spring 2011

This course will examine the nature of human consciousness from the interdisciplinary perspective of cognitive science. It will cover topics from the philosophy of mind, cognitive linguistics, neuroscience, psychology, and computational models.

Recommended Courses: Psych C120/CogSci C100 OR Psych/CogSci C127

Scientific Approaches to Consciousness: [Read More \[+\]](#)

### Rules & Requirements

**Prerequisites:** Required courses: Psych 1, Psych W1, Psych 2, OR CogSci 1

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** PSYCH C129

Scientific Approaches to Consciousness: [Read Less \[-\]](#)

## COG SCI C104 The Mind, Language, and Politics 4 Units

Terms offered: Fall 2011, Spring 2011, Fall 2009

An analysis of contemporary liberal and conservative thought and language, in terms of the basic mechanisms of mind: frames, prototypes, radial categories, contested concepts, conceptual metaphor, metonymy, and blends. The framing of political discourse. The logic of political thought. The purpose of the course is to provide students interested in political and social issues with the tools to analyze the framing of, and logic behind, contemporary political discourse.

The Mind, Language, and Politics: [Read More \[+\]](#)

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

**Instructor:** G. Lakoff

**Also listed as:** LINGUIS C104

The Mind, Language, and Politics: [Read Less \[-\]](#)

## COG SCI C126 Perception 3 Units

Terms offered: Spring 2018, Spring 2017, Spring 2016

An introduction to principal theoretical constructs and experimental procedures in visual and auditory perception. Topics will include psychophysics; perception of color, space, shape, and motion; pattern recognition and perceptual attention.

Perception: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Consent of instructor. 101 recommended

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** PSYCH C126

Perception: [Read Less](#) [-]

## COG SCI C127 Cognitive Neuroscience 3 Units

Terms offered: Fall 2017, Spring 2017, Fall 2016

This course will examine research investigating the neurological basis of cognition. Material covered will include the study of brain-injured patients, neurophysiological research in animals, and the study of normal cognitive processes in humans with non-invasive behavioral and physiological techniques such as functional Magnetic Resonance Imaging (fMRI), electroencephalography (EEG), and transcranial magnetic stimulation (TMS). Topics to be covered include perception, attention, memory, language, motor control, executive control, and emotion.

Cognitive Neuroscience: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Psych/MCB C61 OR Psych 110, or Psych C120/Cog Sci C100, and relevant prerequisites. Courses may be taken simultaneously with Psych C127.<BR/>Enrollment limited to students who are declared Psych, CogSci, MCB, or IB majors, or by permission of the instructor if the student has declared another major

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Also listed as:** PSYCH C127

Cognitive Neuroscience: [Read Less](#) [-]

## COG SCI 131 Computational Models of Cognition 4 Units

Terms offered: Spring 2018, Fall 2016, Fall 2015

This course will provide advanced students in cognitive science and computer science with the skills to develop computational models of human cognition, giving insight into how people solve challenging computational problems, as well as how to bring computers closer to human performance. The course will explore three ways in which researchers have attempted to formalize cognition -- symbolic approaches, neural networks, and probability and statistics -- considering the strengths and weaknesses of each.

Computational Models of Cognition: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** Calculus, discrete mathematics, C1, Computer Science 61A, or equivalents

**Credit Restrictions:** Student will receive no credit for Cognitive Science 131 after taking Cognitive Science C131/Psychology C123. A deficient grade in Cognitive C131/Psychology C123 may be removed by taking Cognitive Science 131.<BR/>

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Alternative to final exam.

Computational Models of Cognition: [Read Less](#) [-]

## COG SCI C140 Quantitative Methods in Linguistics 4 Units

Terms offered: Spring 2017, Spring 2016, Spring 2015

An introduction to research using quantitative analysis in linguistics and cognitive science. Students will learn how to use the R programming environment for statistical analysis and data visualization.

Quantitative Methods in Linguistics: [Read More](#) [+]

### Rules & Requirements

**Prerequisites:** 100 or graduate student standing

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture and 1 hour of discussion per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Gahl

**Also listed as:** LINGUIS C160

Quantitative Methods in Linguistics: [Read Less](#) [-]



## COG SCI C142 Language and Thought 3 Units

Terms offered: Spring 2017, Summer 2016, Spring 2016

This seminar explores the relation of language and thought. Is language uniquely human, and if so, what does this reveal about the human mind? Does the particular language you speak affect the way you think, or do human languages reflect a universal conceptual repertoire? The goal of this class is to familiarize you with a set of classic arguments on these themes, together with current research that evaluates these arguments, through weekly reading and discussion.

Language and Thought: Read More [+]

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of seminar per week

**Summer:** 6 weeks - 7.5 hours of seminar per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Regier

**Also listed as:** LINGUIS C142

Language and Thought: Read Less [-]

## COG SCI C147 Language Disorders 3 Units

Terms offered: Summer 2015 10 Week Session, Summer 2015 Second 6 Week Session, Spring 2013

An introduction to experimental and theoretical research on language disorders, particularly acquired aphasia in adults. Major course themes include the relationship between normal and pathological language, and the usefulness of linguistic analysis for empirical research. Topics include phonetic, phonological, morphological, semantic, syntactic, and pragmatic aspects of language disorders in mono- and multilingual speakers of typologically diverse languages.

Language Disorders: Read More [+]

### Rules & Requirements

**Prerequisites:** Linguistics 100 or consent of the instructor

### Hours & Format

**Fall and/or spring:** 15 weeks - 3 hours of lecture per week

**Summer:** 6 weeks - 7.5 hours of lecture per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam required.

**Instructor:** Gahl

**Also listed as:** LINGUIS C147

Language Disorders: Read Less [-]

## COG SCI 190 Special Topics in Cognitive Science 3 Units

Terms offered: Spring 2018, Fall 2017, Fall 2016

Selected topics in the study of Cognitive Science.

Special Topics in Cognitive Science: Read More [+]

### Rules & Requirements

**Prerequisites:** Consent of instructor

**Repeat rules:** Course may be repeated for credit as topic varies. Course may be repeated for credit when topic changes.

### Hours & Format

**Fall and/or spring:** 15 weeks - 2 hours of seminar per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Special Topics in Cognitive Science: Read Less [-]

## COG SCI H195A Special Study for Honors Candidates 1 - 3 Units

Terms offered: Spring 2013, Spring 2012, Fall 2011

Independent study and preparation of an honors thesis under the supervision of a faculty member.

Special Study for Honors Candidates: Read More [+]

### Rules & Requirements

**Prerequisites:** Open only to senior cognitive science majors in the honors program

**Repeat rules:** Course may be repeated for a maximum of 6 units. Course may be repeated for a maximum of 6 units.

### Hours & Format

**Fall and/or spring:** 15 weeks - 0 hours of independent study per week

### Additional Details

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Special Study for Honors Candidates: Read Less [-]

## **COG SCI H195B Special Study for Honors Candidates 1 - 3 Units**

Terms offered: Spring 2011, Spring 2008, Spring 2007  
Independent study and preparation of an honors thesis under the supervision of a faculty member.

Special Study for Honors Candidates: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Open only to senior cognitive science majors in the honors program

**Repeat rules:** Course may be repeated for a maximum of 6 units. Course may be repeated for a maximum of 6 units.

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 0 hours of independent study per week

### **Additional Details**

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Letter grade. Final exam not required.

Special Study for Honors Candidates: [Read Less](#) [-]

## **COG SCI 197 Academic Internship Credit 1 - 3 Units**

Terms offered: Summer 2017 10 Week Session  
Academic internship credit for students pursuing an internship related to their studies in the Cognitive Science Program. Limited to Cognitive Science declared majors with at least 60 units, and a 2.0 GPA.

Academic Internship Credit: [Read More](#) [+]

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 2-7 hours of independent study per week

**Summer:** 10 weeks - 4-11 hours of independent study per week

### **Additional Details**

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Academic Internship Credit: [Read Less](#) [-]

## **COG SCI 198 Directed Group Study 1 - 4 Units**

Terms offered: Spring 2016, Fall 2015, Spring 2015  
Seminar for the group study of selected topics. Topics may be initiated by students subject to the approval of the major advisor.

Directed Group Study: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Upper division standing and consent of instructor

**Repeat rules:** Course may be repeated for credit.

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 1-4 hours of directed group study per week

### **Additional Details**

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Directed Group Study: [Read Less](#) [-]

## **COG SCI 199 Independent Study in Research 1 - 4 Units**

Terms offered: Fall 2015, Fall 2014, Spring 2013  
Independent study and research by arrangement with faculty.

Independent Study in Research: [Read More](#) [+]

### **Rules & Requirements**

**Prerequisites:** Restricted to juniors and seniors

**Repeat rules:** Course may be repeated for credit.

### **Hours & Format**

**Fall and/or spring:** 15 weeks - 1-4 hours of independent study per week

**Summer:** 8 weeks - 1.5-7.5 hours of independent study per week

### **Additional Details**

**Subject/Course Level:** Cognitive Science/Undergraduate

**Grading/Final exam status:** Offered for pass/not pass grade only. Final exam not required.

Independent Study in Research: [Read Less](#) [-]