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 contact the student academic adviser in 243 Evans Hall, 510-642-2628.

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.

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. 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 both upper and lower division courses in 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 major and minor programs, 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
Addtional lower division requirements: two courses	7
Upper division distribution requirements: six courses	18-24
Upper division electives: three courses	9-12
Total Units	44-55

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 ((preferred))	4
or ENGIN 7	Introduction to Computer Programming for Scientists and Engineers	

Additional Lower Division Requirements

Note: The two lower division requirements below are not prerequisites for admission to the major, but are requirements and should be completed as early as possible, as they provide the foundations for other required courses.

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
PSYCH 117	Human Neuropsychology
COG SCI/ PSYCH C127	Cognitive Neuroscience
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 C124	Course Not Available
COG SCI/ PSYCH C126	Perception
PSYCH 122	Introduction to Human Learning and Memory
PSYCH C143	Language Acquisition
PSYCH 164	Social Cognition
Computational Modeling	
COG SCI 131	Computational Models of Cognition
COMPSCI 188	Introduction to Artificial Intelligence
Linguistics	
LINGUIS 100	Introduction to Linguistic Science
COG SCI C101/ LINGUIS C105	The Mind and Language
COG SCI/ LINGUIS C142	Language and Thought
COG SCI/ LINGUIS C147	Language Disorders
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	
COG SCI C103/ HISTORY C192/ MEDIAST C104C/ INFO C103	Course Not Available
COG SCI/ LINGUIS C104	The Mind, Language, and Politics
ANTHRO 166	Language, Culture, and Society
ECON 119	Psychology and Economics
EDUC 140AC	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
SOCIOL 150A	Course Not Available

Upper Division Electives

Students may wish to add an optional concentration, which consists 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. In both the cognitive psychology and linguistics concentrations, one of the three courses must be a gateway course. Concentrations are not recorded on the student's transcript or diploma, and progress toward their completion is not tracked by the student's adviser.

Select three courses from the following list:

Cognitive Neuroscience	
MCELLBI 160	Cellular and Molecular Neurobiology
MCELLBI 161	Circuit, Systems and Behavioral Neuroscience
MCELLBI 160L	Neurobiology Laboratory
MCELLBI 163	Course Not Available
MCELLBI 164	Course Not Available
MCELLBI 165	Neurobiology of Disease
MCELLBI 166	Biophysical Neurobiology
PSYCH 110	Introduction to Biological Psychology
PSYCH 111	Course Not Available
PSYCH 114	Biology of Learning and Neural Plasticity
COG SCI C110/ COMPSCI C18 LINGUIS C109	Course Not Available
INTEGBI 245 & 245L	Course Not Available and Course Not Available
Cognitive Psychology	
COG SCI/ PSYCH C127	Cognitive Neuroscience
PSYCH 107	Buddhist Psychology
PSYCH 111	Course Not Available
PSYCH 121	Animal Cognition
PSYCH 133	Psychology of Sleep
MUSIC 108/108M	Music Perception and Cognition
EDUC 224A	Mathematical Thinking and Problem Solving
EDUC C229A	Proseminar: Problem Solving and Understanding
Computational Modeling	
COG SCI C110/ LINGUIS C109/ COMPSCI C18	Course Not Available
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
VIS SCI 265	Neural Computation
Linguistics	
LINGUIS 110	Introduction to Phonetics and Phonology
LINGUIS 120	Introduction to Syntax and Semantics
LINGUIS 106	Metaphor

COG SCI/ LINGUIS C108	Course Not Available
COG SCI C110/ LINGUIS C109/ COMPSCI C182	Course Not Available
LINGUIS 115	Phonology and Morphology
LINGUIS 121	Logical Semantics
LINGUIS 123	Pragmatics
LINGUIS 158	Computational Methods
COG SCI C140/ LINGUIS C160	Quantitative Methods in Linguistics
LINGUIS 181	Lexical Semantics
COG SCI/ PSYCH C124	Course Not Available
PSYCH C143	Language Acquisition
Philosophy	
PHILOS 128	Philosophy of Science
PHILOS 130	Course Not Available
PHILOS 138	Philosophy of Society
PHILOS 140A	Intermediate Logic
PHILOS 140B	Intermediate Logic
PHILOS 174	Course Not Available
PHILOS 176	Hume
PHILOS 178	Kant
PHILOS 185	Heidegger
PHILOS 186B	Later Wittgenstein
PHILOS 188	Phenomenology
COG SCI/ LINGUIS C108	Course Not Available
Society, Culture, and Cognition	
ANTHRO 149	Psychological Anthropology
ANTHRO 160AC	Forms of Folklore
ANTHRO 161	Narrative Folklore
INFO 146	Course Not Available
LINGUIS 130	Comparative and Historical Linguistics
LINGUIS/ SLAVIC C139	Language Spread
LINGUIS 151	Language and Gender
LINGUIS 170	History, Structure, and Sociolinguistics of a Particular Language
NATAMST 151	Native American Philosophy
PHILOS 153	Course Not Available
POL SCI 161	Public Opinion, Voting and Participation
POL SCI 164A	Political Psychology and Involvement
PSYCH 167AC	Stigma and Prejudice
RHETOR 103A	Approaches and Paradigms in the History of Rhetorical Theory
RHETOR 105	Course Not Available
RHETOR 110	Advanced Argumentative Writing
RHETOR 170	Rhetoric of Social Science

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 see the College of Letters & Sciences (http://guide.berkeley.edu/archive/2015-16/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. 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 University Extension during your senior year. In these cases, you should make an appointment to see 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 majors 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.

Cognitive Science

COG SCI 1 Introduction to Cognitive Science 4 Units
Terms offered: Fall 2017, Spring 2017, Spring 2016
This course introduces the interdisciplinary field of cognitive science. Lectures and readings will survey research from artificial intelligence, pyschology, 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.
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.

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.
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.

COG SCI N1 Introduction to Cognitive Science 3 Units
Terms offered: Summer 2017 First 6 Week Session, Summer 2017 Second 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.
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

COG SCI 88 Data Science and the Mind 2 Units
Terms offered: Fall 2017, Spring 2017, Fall 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.
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.

COG SCI 98 Directed Group Study 1 - 4 Units
Terms offered: Fall 2017, Spring 2017, Fall 2016
Seminar for the group study of selected topics. Topics may be initiated by students subject to the approval of the major advisor.
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. Course may be repeated for credit when topic changes.

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.

COG SCI 99 Supervised Independent Study and Research 1 - 4 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
Independent study and research by arrangement with faculty.
Rules & Requirements

Prerequisites: Restricted to freshmen and sophomores; consent of instructor

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

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.

COG SCI C100 Basic Issues in Cognition 3 Units
Terms offered: Fall 2017, Summer 2017 Second 6 Week Session, Fall 2016
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.
Rules & Requirements

Credit Restrictions: Students will receive no credit for C120 after taking 120A.

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

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.
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

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
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

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.
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

COG SCI C126 Perception 3 Units
Terms offered: Spring 2017, Spring 2016, Spring 2015
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.
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

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.
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.
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

COG SCI 131 Computational Models of Cognition 4 Units
Terms offered: Fall 2017, 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.
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.

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.

COG SCI C140 Quantitative Methods in Linguistics 4 Units
Terms offered: Fall 2017, 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.
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

COG SCI C142 Language and Thought 3 Units
Terms offered: Summer 2017 First 6 Week Session, 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.
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

COG SCI C147 Language Disorders 3 Units
Terms offered: Summer 2016 First 6 Week Session, Summer 2016 Second 6 Week Session, 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.
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

COG SCI 190 Special Topics in Cognitive Science 3 Units
Terms offered: Fall 2017, Fall 2016, Spring 2009
Selected topics in the study of Cognitive Science.
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.

COG SCI H195A Special Study for Honors Candidates 1 - 3 Units
Terms offered: Fall 2017, Spring 2017, Fall 2016
Independent study and preparation of an honors thesis under the supervision of a faculty member.
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.

COG SCI H195B Special Study for Honors Candidates 1 - 3 Units
Terms offered: Fall 2017, Spring 2017, Fall 2016
Independent study and preparation of an honors thesis under the supervision of a faculty member.
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.

COG SCI 197 Academic Internship Credit 1 - 3 Units
Terms offered: Not yet offered
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.
Rules & Requirements

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

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.

COG SCI 198 Directed Group Study 1 - 4 Units
Terms offered: Fall 2017, Spring 2017, Fall 2016
Seminar for the group study of selected topics. Topics may be initated by students subject to the approval of the major advisor.
Rules & Requirements

Prerequisites: Upper division standing and consent of instructor

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

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.

COG SCI 199 Independent Study in Research 1 - 4 Units
Terms offered: Fall 2017, Spring 2017, Fall 2016
Independent study and research by arrangement with faculty.
Rules & Requirements

Prerequisites: Restricted to juniors and seniors

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

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.