# COGNITIVE SCIENCE, BACHELOR OF ARTS

**College of Letters & Science**

## The Major Programs

The Cognitive Science major is designed to provide a broad interdisciplinary approach to the study of mind that includes courses from different departments and attracts students with a variety of interests. It emphasizes a multifaceted approach to the study of the mind integrating concepts and techniques from psychology, artificial intelligence, linguistics, neurology, philosophy and other relevant fields.

For students interested in the liberal arts the Cognitive Science major can be pursued as a Bachelor of Arts (A.B.) program. Alternatively, it can be pursued as a Bachelor of Science (B.S.) program for students with a stronger interest in the mathematical, neurological and computational foundations of the discipline. The main objective of both programs is to give the student a broad grounding in the integrated sciences of the mind and to connect approaches from different fields. Students must complete a number of core courses for the degree, as well as a number of specialty courses on such wide-ranging topics as logic for artificial intelligence, computational linguistics, cognitive neuroscience, animal cognition and the psychology of music.

### Career Alternatives

A degree in Cognitive Science provides broad intellectual foundations useful for careers in a variety of areas, including teaching, business, social work/counseling and the information technology industry. Undergraduate education in cognitive science also prepares the student for graduate study in appropriate subfields of psychology, linguistics, philosophy and informatics. It is also suitable training for pre-medicine, pre-law, and pre-management students.

### Major Advisors

Staff advisors are located in Young Hall; cogsciadvising@ucdavis.edu; 530 752 5104. For more information on how to make an appointment or join Drop-In Advising hours, see Yellow Cluster Undergraduate Advising Center (https://yellowcluster.ucdavis.edu/advising/undergraduate/).

| Code | Title | Units |
|---|---|---|
| **Preparatory Subject Matter** | | |
| *Cognitive Science* | | |
| CGS 001/PHI 010 | Introduction to Cognitive Science | 4 |
| *Linguistics* | | |
| LIN 001 | Introduction to Linguistics | 4 |
| or LIN 001Y | Introduction to Linguistics | |
| *Philosophy* | | |
| PHI 012 | Introduction to Symbolic Logic | 4 |
| PHI 013G | Minds, Brains, & Computers with Discussion | 4 |
| *Psychology* | | |
| PSC 001 | General Psychology | 4 |
| or PSC 001Y | General Psychology | |
| *Statistics* | | |
| STA 013 | Elementary Statistics | 4 |
| or STA 013Y | Elementary Statistics | |
| or STA 100 | Applied Statistics for Biological Sciences | |
| *Research Methods* | | |
| PSC 041 | Research Methods in Psychology (recommended to take Statistics before Research Methods) | 4 |
| Preparatory Subject Matter Subtotal | | 28 |
| **Depth Subject Matter** | | |
| *Group A: Core* | | |
| All courses from Group A: | | 12 |
| PSC 100 | Introduction to Cognitive Psychology | |
| or PSC 100Y | Introduction to Cognitive Psychology | |
| PHI 112 | Intermediate Symbolic Logic | |
| CGS Topical Course: one upper division CGS course [1] | | |
| *Group B: Computation* | | |
| One course from Group B: | | 4 |
| LIN 177 | Computational Linguistics | |
| PHI 133 | Logic, Probability, & Artificial Intelligence | |
| CMN 150V | Computational Social Science | |
| CMN 151 | Simulating Communication Processes | |
| *Concentration Areas: 16 units from your choice of two groups from Groups B-F* | | *16* |
| *CGS Electives: 12 additional units from Groups B-G* | | *12* |
| *Group C: Neuroscience* | | |
| CGS/ECN 107/ PSC 133 | Neuroeconomics/Reinforcement Learning & Decision Making | |
| PSC 121 | Physiological Psychology | |
| PSC 135 | Cognitive Neuroscience: The Biological Foundations of the Mind | |
| PSC 139 | Advanced Cognitive Neuroscience | |
| PSC 145 | Developmental Cognitive Neuroscience | |
| *Group D: Linguistics* | | |
| LIN 103A | Linguistic Analysis I: Phonetics, Phonology, Morphology | |
| LIN 103B | Linguistic Analysis II: Morphology, Syntax, Semantics | |
| LIN 131 | Introduction to Syntactic Theory | |
| LIN 141 | Semantics | |
| LIN 171 | Introduction to Psycholinguistics | |
| LIN/EDU 173 | Language Development | |
| *Group E: Philosophy* | | |
| PHI 103 | Philosophy on Mind | |
| PHI 104 | The Evolution of Mind | |
| PHI 129 | Knowledge & the A Priori | |
| PHI 136 | Formal Epistemology | |
| *Group F: Psychology* | | |
| PSC 101 | Introduction to Biological Psychology | |
| PSC 130 | Human Learning & Memory | |
| PSC 131 | Perception | |
| PSC 132 | Language & Cognition | |
| PSC 136 | Psychology of Music | |
| PSC 137 | Neurobiology of Learning & Memory | |
| PSC 140 | Developmental Psychology | |
| or PSC 140Y | Developmental Psychology | |

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|---|---|---|
| PSC 141 | Cognitive Development | |
| or HDE 101 | Cognitive Development | |
| *Group G: Other* | | |
| CMN 101 | Communication Theories | |
| CMN 101Y | Communication Theories | |
| CMN 121 | Language Use in Conversation | |
| EDU 110 | Educational Psychology: General | |
| EDU/LIN 173 | Language Development | |
| HDE 100C | Adulthood & Aging | |
| HDE 161 | Technology Use, Health, & Aging | |
| HDE 163 | Cognitive Neuropsychology in Adulthood & Aging | |
| LIN 112 | Phonetics | |
| LIN 121 | Morphology | |
| LIN 150 | Languages of the World | |
| LIN 152 | Language Universals & Typology | |
| LIN 182 | Multilingualism | |
| PHI 102 | Theory of Knowledge | |
| PHI 112 | Intermediate Symbolic Logic | |
| PHI 125 | Theory of Action | |
| PHI 128 | Rationality | |
| PHI 137A | Philosophy of Language: Theory of Reference | |
| PHI 137B | Philosophy of Language: Truth & Meaning | |
| PHI 137C | Philosophy of Language: Semantics & Pragmatics | |
| PSC 113 | Developmental Psychobiology | |
| PSC/NPB 124 | Comparative Neuroanatomy | |
| PSC 142 | Social & Personality Development | |
| or HDE 102 | Social & Personality Development | |
| PSC 148 | Developmental Disorders | |
| PSC 152 | Social Cognition | |
| STA 106 | Applied Statistical Methods: Analysis of Variance | |
| STA 108 | Applied Statistical Methods: Regression Analysis | |
| Depth Subject Matter Subtotal | | 44 |
| **Total Units** | | **72** |

[1] For a list of approved *CGS Topical Courses*, please see the major worksheet (https://yellowcluster.ucdavis.edu/cognitivescience/).