BRAIN AND COGNITIVE SCIENCE (BCOG)

BCOG Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/BCOG)

Courses

**BCOG 100  Introduction to the Brain and Cognitive Science**  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BCOG/100)
Introduction to the study of mind, brain, and behavior. The course will cover how we study the mind and brain from a cognitive science perspective. The course will include topics in sensation, perception, learning, memory, thinking, artificial intelligence, animal cognition, and the development of the mind and brain.

**BCOG 200  Introduction to Programming for the Brain and Cognitive Sciences**  credit: 4 Hours. (https://courses.illinois.edu/schedule/terms/BCOG/200)
Introduction to computer programming concepts and their application to the study of brain and cognitive sciences. The course will teach basic programming concepts in Python, and introduce applications to experiment and game design, data analysis, computational modeling, and simulations.

**BCOG 301  Intelligence and the Brain**  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BCOG/301)
An introduction to the scientific study of human intelligence, with particular emphasis on modern research in cognitive neuroscience. For centuries, the nature of human intelligence has motivated considerable research and debate: What does it mean for humans to be intelligent? What mental abilities does intelligence refer to? How are these abilities shaped by the environment, cultivated through experience, and represented in the human brain? This course addresses these questions through the lens of modern research in psychology, psychometrics, and cognitive neuroscience. Students will investigate the nature and mechanisms of human intelligence from basic, clinical, and applied disciplines.

**BCOG 458  Advances in Brain and Cognitive Science**  credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BCOG/458)
An in-depth, integrative overview of the major themes in the study of Cognitive Science, including cognition as computation, the relation between mind and brain, computability and the role of heuristics in "solving" unsolvable problems, and the logical/mathematical foundations of these themes. Specific topics covered include inverse optics and vision; induction and reasoning; learnability and language; philosophy of minds and brains; evolution; artificial intelligence and computational modeling; information theory; knowledge representation. The emphasis throughout is on the interrelations among these topics as examples of important but fundamentally unsolvable problems. Same as PHIL 458. 3 undergraduate hours. No graduate credit. Prerequisite: One of PSYC 224, PSYC 248, PHIL, 202, PHIL 270, or consent of instructor.