Cognitive Science (COGS)

Courses

COGS 007 Introduction to Cognitive Science 4 Credits
What is a mind? How is the mind related to the brain? Could we make an artificial mind? Issues concerning knowledge representation and intelligence in humans are investigated by psychologists, linguists, neuroscientists, and researchers in artificial intelligence.

Prerequisites: COGS 301 and consent of the program director.

COGS 117 (PSYC 117) Cognitive Psychology 4 Credits
The architecture and dynamics of the human mind: How we acquire knowledge through perception, represent and activate it in memory, and use it to communicate, make decisions, solve problems, and reason creatively. May not be taken pass/fail.

Prerequisites: PSYC 001 or COGS 007

Attribute/Distribution: SS

COGS 140 (ANTH 140, MLL 140) Introduction to Linguistics 4 Credits
Relationship between language and mind; formal properties of language; language and society; how languages change over time. May not be taken pass/fail.

Attribute/Distribution: SS

COGS 161 Supervised Research 1-3 Credits
Research under the direct supervision of a faculty member in the cognitive science program. Students must arrange the particular project with a faculty member before enrolling.

Repeat Status: Course may be repeated.

COGS 176 (PSYC 176) Cognitive Neuroscience 4 Credits
Perception and cognitive neuroscience as the link between mental processes and their biological bases. Visual and auditory perception; the control of action; neuropsychological syndromes of perception, language, memory, and thought; neural network (connectionist) models of mental processes. May not be taken pass/fail.

Prerequisites: PSYC 001 or COGS 007

Attribute/Distribution: NS

COGS 194 Special Topics in Cognitive Science 2-4 Credits
Topics vary from semester to semester. Topics are addressed at an intermediate level. Previous course work in cognitive science and consent of faculty sponsor is required.

Repeat Status: Course may be repeated.

COGS 250 (PHIL 250) Philosophy of Mind 4 Credits
An exploration of the mind-body problem. Are the body and mind distinct substances (dualism); or is there only body (materialism); or only mind (idealism)? Other views to be considered include behaviorism (the view that behavior can be explained without recourse to mental states), and the view that the mind is a complex computer. Must have completed one HU-designated course in Philosophy at 100-level or higher.

Attribute/Distribution: HU

COGS 300 Apprentice Teaching 1-4 Credits

COGS 301 Senior Project in Cognitive Science: Proposal 1-3 Credits
For students not intending to apply for program Honors. Background reading and preparation of a short written proposal are conducted in the first semester in consultation with a faculty adviser. Consent of program director and project adviser required.

Repeat Status: Course may be repeated.

COGS 302 Senior Project in Cognitive Science: Execution 1-3 Credits
For students not intending to apply for program Honors. Execution of the project is conducted in the second semester in consultation with a faculty adviser. A poster presentation will be given at the end of the semester. Consent of program director and project adviser required.

Prerequisites: COGS 301 and consent of the program director.

COGS 327 (CSE 327) Artificial Intelligence Theory and Practice 3 Credits
Introduction to the field of artificial intelligence: Problem solving, knowledge representation, reasoning, planning and machine learning. Use of AI systems or languages. Advanced topics such as natural language processing, vision, robotics, and uncertainty. CSE 261 is recommended.

Prerequisites: (CSE 001 and CSE 002) or CSE 017

COGS 361 Independent Research 2-4 Credits
Independent research in cognitive science with a faculty advisor. Students must arrange the particular project with a faculty advisor before enrolling. Consent of program director required.

Repeat Status: Course may be repeated.

COGS 391 Honors Thesis in Cognitive Science: Proposal 1-4 Credits
For students with 3.3 or higher GPA overall and in major by the spring of the junior year, who want to undertake a research project with the potential to result in program Honors. Literature review and preparation of a written proposal are conducted in the first semester in consultation with a faculty advisor. An oral presentation will be given at the end of the semester. Consent of program director and project adviser required.

COGS 392 Honors Thesis in Cognitive Science: Project Execution and Thesis 1-4 Credits
For students with 3.3 or higher GPA overall and in major by the spring of the junior year, who want to undertake a research project with the potential to result in program Honors. Project execution and preparation of the written report is conducted in the second semester in consultation with a faculty advisor. An oral presentation will be given at the end of the semester. Theses will be evaluated for Honors by three cognitive science faculty.

Prerequisites: COGS 391

COGS 394 Special Topics in Cognitive Science 3-4 Credits
Topics vary from semester to semester. Topics are presented at an advanced level.

Repeat Status: Course may be repeated.

COGS 399 Senior Project in Cognitive Science: Thesis 1-3 Credits
Research during senior year culminating in senior thesis advised by a member of the Cognitive Science faculty. Execution and written report of project proposed and approved in COGS 301. Students must enroll for a total of three credits which may be split between the sections of a primary and secondary adviser. Theses submitted for honors will be evaluated by a committee of at least three cognitive science faculty.

Prerequisite: COGS 301 and consent of the program director.

Repeat Status: Course may be repeated.

COGS 405 Individual Study in Cognitive Science 1-6 Credits
Study of a topic not covered in regular course offerings. By arrangement with a consulting faculty member. Consent of program director required.

Repeat Status: Course may be repeated.

COGS 423 (PSYC 423) Foundations of Cognitive Science 3 Credits
Survey of fundamental theory and methodologies from artificial intelligence, linguistics, cognitive psychology, philosophy, and neuroscience, as well as salient research problems such as knowledge acquisition and representation, natural language processing, skill acquisition, perception and action, and the philosophical question of intentionality.

Prerequisite: PSYC 423

COGS 478 (PSYC 478) Ontological Psychology 3 Credits
Principles and constraints for modeling psychological phenomena. Representation; perception; memory; knowing; learning; emotions; consciousness; language; rationality.