COGNITIVE SCIENCE (COGS)

COGS 100 Introduction to Cognitive Science Units: 3.00
A multidisciplinary approach to the study of the mind combining approaches from philosophy, psychology, linguistics, neuroscience, anthropology, and artificial intelligence. Logic, rules, concepts, and other mental representations used to generate thought and behaviour. Implementation of computational and cognitive models of mental processes.
NOTE Also offered online. Consult Arts and Science Online.
Learning Hours may vary.
Learning Hours: 120 (36 Lecture, 84 Private Study)
Requirements: Prerequisite None.
Offering Faculty: Faculty of Arts and Science

COGS 201 Cognition and Computation Units: 3.00
Introduction to the computational aspects of the mind. Implementation of computer programs for reasoning, decision making, and problem solving to understand these mental processes. Information theory and behaviourism; computational models of cognition, perception and memory processes demonstrating modeling approaches, and cognitive architectures.
Learning Hours: 120 (36 Lecture, 84 Private Study)
Requirements: Prerequisite Level 2 or above and a minimum grade of a C- (obtained in any term) or a 'Pass' (obtained in Winter 2020) in (COGS 100 or PSYC 100). Exclusion COGS 200; PSYC 220.
Offering Faculty: Faculty of Arts and Science

COGS 300 Programming Cognitive Models Units: 3.00
Importance and challenges of building cognitive models; steps of model building, programming simple models using computational and statistical techniques and tools such as Matlab. Recent models from research publications.
Learning Hours: 120 (36 Lecture, 84 Private Study)
Requirements: Prerequisite A minimum grade of a C- (obtained in any term) or a 'Pass' (obtained in Winter 2020) in (COGS 201 or PSYC 221) and (PSYC 202 or STAT_Options).
Offering Faculty: Faculty of Arts and Science

COGS 400 Neural and Genetic Cognitive Models Units: 3.00
Artificial Neural Networks (ANN) and Genetic Algorithms (GA) for problem solving and prediction tasks such as classification, clustering, optimization and data reduction and modeling human cognition, with application to real world problems. Ongoing research in this area in various application domains.
Learning Hours: 120 (36 Lecture, 84 Private Study)
Requirements: Prerequisite Registration in a COGS Plan and a minimum grade of a C- (obtained in any term) or a 'Pass' (obtained in Winter 2020) in (CISC 235 or ELEC 278). Exclusion CISC 452; CMPE 452.
Offering Faculty: Faculty of Arts and Science

COGS 499 Advanced Undergraduate Project Units: 3.00
Topic selected under the supervision of a faculty member from CISC, LING, PHIL, or PSYC. Emphasis may be on experimental, theoretical, or computer implementation. Independent research, an oral presentation, and a written report are required. The student must make a project proposal and secure a supervisor prior to enrolling in the course.
Learning Hours: 120 (24 Seminar, 12 Individual Instruction, 84 Private Study)
Requirements: Prerequisite ([Level 4 or above and registration in the COGS Specialization Plan with a cumulative GPA of 1.90 or higher] and [GPA of 2.60 in CISC/COCA/COGS/SOFT] and a [minimum of 12.0 units in CISC/COCA/COGS/SOFT at the 300-level or above] and [GPA of 2.60 in CISC/COCA/COGS/SOFT at the 300-level or above] and permission of the School). Exclusion Maximum of one course from: CISC 495/3.0; CISC 496/3.0; CISC 499/3.0; CISC 500/6.0; COGS 499/3.0. Exclusion Maximum of one course from: CISC 498/6.0; COGS 499/3.0.
Offering Faculty: Faculty of Arts and Science

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COGS 594 Independent Study Units: 3.00
Exceptionally qualified students entering their third- or fourth-year may take a program of independent study provided it has been approved by the Department or Departments principally involved. The Department may approve an independent study program without permitting it to be counted toward a concentration in that Department. It is, consequently, the responsibility of students taking such programs to ensure that the concentration requirements for their degree will be met.
NOTE Requests for such a program must be received one month before the start of the first term in which the student intends to undertake the program.
Requirements: Prerequisite Permission of the Department or Departments principally involved.
Offering Faculty: Faculty of Arts and Science