CSE 002-multiple sections Fundamentals of Programming
2 credits / Refer to Banner for CRN / Instructor / Meeting Times
Problem-solving and object-oriented programming using Java. Includes laboratory. No prior programming experience needed.

COGS 007-010 Introduction to Cognitive Science (SS)
CRN 15738 / 4 credits / M, W; 2:35 - 3:50 p.m. / Prof. Malt
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 minds and computers as investigated by psychologists, philosophers, linguists, neuroscientists, and researchers in artificial intelligence.

ANTH 012-010 Human Evolution and Prehistory (NS)
CRN 17242 / 4 credits / M, W 12:45 - 2:00 p.m. / Prof. Mickel
Introductory biological anthropology and prehistory. Adaptive functions of human culture and its relation to biological evolution. Mechanisms of evolution, non-human primate morphology and behavior, hominid fossil record, cultural beginnings, and survey of world prehistory.

CSE 012-060 Survey of Computer Science
CRN 16517 / 3 credits / T, R; 1:10 – 2:25 p.m. / Prof. Kalafut
Fundamental concepts of computing and "computational thinking": problem analysis, abstraction, algorithms, digital representation of information, and networks. Applications of computing and communication that have changed the world. Impact of computing on society. Concepts of software development using a scripting language such as Python, Perl, or Ruby. Not available to students who have taken CSE 015 or CSE 001.

CSE 017-multiple sections Programming and Data Structures
3 credits / Refer to Banner for CRN / Instructor / Meeting Times
Algorithmic design and implementation in a high level, object oriented language, such as Java. Classes, subclasses, recursion, searching, sorting, linked lists, trees, stacks, queues.

MATH 021-multiple sections Calculus I
4 credits / Refer to Banner for CRN / Instructor / Meeting Times
Functions and graphs; limits and continuity; derivative, differential, and applications; indefinite and definite integrals; trigonometric, logarithmic, exponential, and hyperbolic functions.

ECO 045-multiple sections Statistical Methods
3 credits / Refer to Banner for CRN / Instructor / Meeting Times
Descriptive statistics, probability and probability distributions, sampling, estimation, hypothesis testing, chi-square tests, simple regression and correlation. Note: CBE students may not take MATH 012 as a replacement for ECO 045.

PSYC 110-010 Statistical Analysis of Behavioral Data
Department permission required. Open to first year students with departmental permission.
CRN 15104 / 4 credits / R 1:10 – 2:00 pm / Prof Arrington
Principles of experimental design and statistical analysis: characteristics of data and data collection; descriptive statistics; hypothesis testing theory and practice; correlation, chi-square, t-test, analysis of variance. Three hours lecture and one-hour computer lab.

PHIL 128-010 Philosophy of Science (HU)
CRN 18966 / 4 credits / T, R 9:20 - 10:35 a.m. / Prof. Casati
Science obviously works, and newer theories surely are better than the theories they replace, but why does science work, how does it work, and in what sense is it progressive? Is science a revelation of reality, or an account of evolving human experience? Are scientists rational? Is scientific reasoning logical? This course surveys the wide range of 20th century responses to these surprisingly elusive, and surprisingly still open, questions.

BIOS 130-multiple sections Biostatistics
4 credits / Refer to Banner for CRN / Instructor / Meeting Times
Elements of statistics and probability theory with emphasis on biological applications. Statistical analysis of experimental and observational data.

COGS, PSYC 176-010 Cognitive Neuroscience (NS)
Prerequisite PSYC 001 or COGS 007 / May not be taken pass/fail.
CRN 16127 / 4 credits / T, R 1:10 - 2:25 p.m. / Prof. Hupbach
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.

PSYC 210-060 Experimental Research Methods and Laboratory
CRN 17841 / 4 credits / WI (Writing Intensive) / T, R 1:10 – 4:00 p.m. / Prof. Nicolopoulou
Designing, conducting, and reporting psychological experiments. Laboratory exercises, report writing, and a group research project. Consent of department required.

PHIL 220-010 Ways of Knowing (HU)
CRN 17933 / 4 credits / M, W 2:35 - 3:50 p.m. / Prof. Bickhard
You can't know whether you are dreaming, how can you know you have two hands? Can we know anything at all? Does knowledge require answers to all possible doubts or only reasonable doubts? How should we determine the horizon of the reasonable—psychologically or philosophically? Must have completed one HU-designated course in Philosophy at 100-level or higher.

STS, CSE, EMC 252-010 Computers, the Internet, and Society (SS)
CRN 15095 / 3 credits / WI (Writing Intensive) / T, R 2:35 - 3:50 p.m. / Prof. Baumer
An interactive exploration of the current and future role of computers, the Internet, and related technologies in changing the standard of living, work environments, society and its ethical values. Privacy, security, depersonalization, responsibility, and professional ethics; the role of computer and Internet technologies in changing education, business modalities, collaboration mechanisms, and everyday life.

BIOS 276-010 Central Nervous System and Behavior (NS)
CRN 16900 / 3 credits / M, W 8:45 – 10:00 a.m. / Prof Burger
Neuronanatomy and neurophysiology of animal and human behavior. Feeding, thirst, sleep, emotions, learning, and psychopathology.

COGS 302-010-024 Senior Project in Cognitive Science: Thesis
CRN various sections / 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 presentation will be given at the end of the semester. Students must enroll for a total of three credits which may be split between the sections of a primary and secondary adviser. Consent of program director and project adviser required.

CSE 318-010 Introduction to the Theory of Computation
CRN 17226 / 3 credits / M, W, F 10:10 – 11:00 a.m. / Prof Loew
Provides a deep understanding of computation, its capabilities and its limitations. The course uses discrete formal methods to (1) formulate precise definitions of three kinds of finite-state machines (finite automata, pushdown automata, and Turing machines); (2) prove properties of these machines by studying their expressiveness (i.e., the kinds of problems that can be solved with these machines), and (3) study computational problems that cannot be solved with algorithms.

CSE 326-010 Fundamentals of Machine Learning
CRN 17896 / 3 credits / M, W 8:45 – 10:00 a.m. / Prof Xie
Bayesian decision theory and the design of parametric and nonparametric classification and regression: linear, quadratic, nearest-neighbors, neural nets. Boosting, bagging.

COGS, CSE 327-010 Artificial Intellence Theory and Practice
Prerequisite CSE 001 and CSE 002 or CSE 017. CSE 261 is recommended.
CRN 15779 / 3 credits / M, W 2:35 - 3:50 p.m. / Prof. Hefflin
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.

PSYC, HMS 344-010 Health Care Reasoning and Decision Making (SS)

Permission by Psychology Department required / Prerequisite: PSYC.COGS 117 or COGS 7 or HMS 160 or HMS 180 or consent of instructor.

CRN 17860 / 4 credits / M, W 8:45 - 10:00 a.m. / Prof. Marsh

Health care professionals diagnose physical and mental illnesses and create treatment plans to improve their patients' health. How do these professionals make decisions related to these important issues? We will explore the literature on how medical and mental health professionals reason and make decisions about health care issues. Topics to be covered include diagnosis, treatment decisions, access to care, and how these reasoning processes are swayed. Consideration will be given to patient decision-making as well.

CSE 360-010 Introduction to Mobile Robotics

CRN 19041 / 3 credits / M, W 8:45 – 10:00 a.m. / Prof. Spletzer

Algorithms employed in mobile robotics for navigation, sensing, and estimation. Common sensor systems, motion planning, robust estimation, bayesian estimation techniques, Kalman and Particle filters, localization and mapping.

PSYC, GS 365-010 Human Development in Cross-Cultural Perspective (SS)

Permission by Psychology Department required.

CRN 17566 / 4 credits / CBE Global, WI (Writing Intensive) / T, R 10:45 - 12:00 p.m. / Prof. Nicolopoulou

The formation of mind and personality is shaped in profound ways by the sociocultural contexts within which individuals develop. This course introduces students to basic theoretical and methodological issues and explores important examples of cross-cultural variation and diversity, using comparisons between different societies and between different subcultures within American society. Topics include cognition, language, personality, moral development, socio-emotional development, identity, sociology and education in addition to psychology.

BIOS 382-10 Endocrinology of Behavior (NS)

CRN 18691 / 3 credits / T, R 1:10 – 2:25 p.m. / Prof Schneider

Hormonal effects upon animal and human behavior. Emphasis on neuroendocrinology of steroid hormone involvement in reproductive behaviors.

BIOS 386-10 Genes and the Brain (NS)

CRN 18094 / 3 credits / M 1:10 – 4:00 p.m. / Prof Miwa

Modern molecular genetics techniques applied to complex brain processes. Emphasis on DNA and RNA manipulation strategies to elucidate mechanisms of complex behaviors. Animal models of learning, behavioral plasticity, and neuropsychiatric diseases.

COGS 392-multiple sections Honors Thesis in Cognitive Science: Project Execution and Thesis

Consent of program director and project adviser required.

CRN various sections / 1-4 credits

For students with 3.3 or higher major and overall GPA by the spring of the junior year. Project execution and preparation of the written report is conducted in the second semester. An oral presentation will be given at the end of the semester. Theses will be evaluated for Honors by three cognitive science faculty. Students must enroll for a total of four credits which may be split between co-advisers.

For more information contact:
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