Computer Science (CS)

Courses

CS 5520 Computer Security and Cryptography: 3 semester hours.
Public key and private key cryptography, key distribution, cryptographic protocols, requisite mathematics and selected topics in the development of security and cryptography. PREREQ: CS 3385.

CS 5542 GUI Development: 3 semester hours.
Planning and construction of Graphical User Interfaces and essential software engineering concepts. Includes the use of a modern toolkit language. COREQ: CS 3385.

CS 5544 Image and Audio Processing: 3 semester hours.
Image/audio acquisition, quantization, spatial and spectral filters, sharpening, smoothing, restoration, compression, segmentation, Fourier and Wavelet transforms. PREREQ: CS MATH 3352 and MATH 3360.

CS 5545 Data Compression: 3 semester hours.
A survey of modern techniques of data compression, both lossy and loss-less, and encryption. COREQ: CS 3386.

CS 5551 Theory and Implementation: 3 semester hours.
Data models, relational algebra, SQL, data storage, index structures, query compilation and execution, concurrency control. COREQ: CS 3386. PREREQ: CS 2263 and CS 3385.

CS 5560 Comparative Programming Languages: 3 semester hours.
Design of historical and contemporary programming languages, concentrating on promoting understanding of structural organization, data structures and typing, name structures, and control structures. COREQ: CS 5575. PREREQ: CS 3385.

CS 5570 Parallel Processing: 3 semester hours.
Topics in high performance computing: parallel architectures, SIMD, MIMD, SMP, NUMA models, message passing, cache coherency issues, MPI, PVM, parallel programming languages, cluster and grid approach, applications, and experience programming on a cluster. COREQ: CS 3385.

CS 5577 Operating Systems: 3 semester hours.
Processes description and control, threads, concurrency, memory management scheduling, I/O and files, distributed systems, security, networking. PREREQ: CS 2263 and CS 5575.

CS 5580 Theory of Computation: 3 semester hours.
Finite representations of languages, deterministic and nondeterministic finite automata, context free languages, regular languages, parsing, Turing Machines, Church's Thesis, uncomputability, computational complexity classes. COREQ: CS 3385.

CS 5581 Compilers and Lexical Analysis: 3 semester hours.
Covers lexical analysis, syntax analysis, top-down, bottom-up, and LR parsing, syntax directed translation, type checking, code generation and optimization, and writing a compiler. PREREQ or COREQ: CS 3386.

CS 5587 Topics in Computer Science: 3 semester hours.
Selected topics in Computer Science will be chosen depending on the instructor's interests. PREREQ: CS 3386.

CS 5591 Ethical and Societal Issues in Computer Science: 3 semester hours.
Investigates various ethical issues arising in the profession, ranging from research to commercial settings. The societal impacts of computing and its prevalence in all aspects of the modern world are investigated. Seminar format: students will read papers, make oral presentations, conduct class discussion, and submit written reports.

CS 5599 Experimental Course: 1-6 semester hours.
This is an experimental course. The course title and number of credits are noted by course section and announced in the class schedule by the scheduling department. Experimental courses may be offered no more than three times. May be repeated.

CS 6699 Experimental Course: 1-6 semester hours.
This is an experimental course. The course title and number of credits are noted by course section and announced in the class schedule by the scheduling department. Experimental courses may be offered no more than three times. May be repeated.

CS 8850 Doctoral Dissertation: 1-24 semester hours.