

# Computer Science (CS)

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**CS 6321. Software Engineering I. 3 Hours.**

Prerequisite CS 3410. Early stages of the software-development process, with emphasis upon analysis and specification. Also, life-cycle definition, software project management, the computer as a system component, and object-oriented approaches. CASE tools will be used as appropriate.

**CS 6322. Software Engineering II. 3 Hours.**

Prerequisite CS 3410 (note that CS 4321/6321 is not a prerequisite). The later stages of the software-development process with emphasis upon design, implementation, verification/validation, and maintenance. Also, human factors, object-oriented techniques, reliability, and quality-assurance issues.

**CS 6330. Theory of Programming Languages. 3 Hours.**

Prerequisite CS 3410 with a grade of "C" or better. Formal description of programming languages, standard and advanced features of modern programming languages, complexity.

**CS 6340. Systems Programming. 3 Hours.**

Prerequisite CS 3410. Implementation of concepts pertaining to the UNIX environment: process control and interprocess communication, job control, file and directory structures, and a client/server processes.

**CS 6500. Foundations of Computer Science. 3 Hours.**

Prerequisites CS 2620 and CS 3410. The course covers concepts pertaining to regular expressions, finite state machines, regular languages, regular grammars, non regular languages, decidability, context-free grammars, and Turing machines.

**CS 6720. Database Design. 3 Hours.**

Prerequisite CS 3410. Examines the logical organization of databases: the entity-relationship model; the hierarchical model, network, and relational models. Hardware characteristics; file organization and evaluation. Functional dependencies and normal forms. Query optimization, concurrency control, and distributed database systems.

**CS 6820. Artificial Intelligence. 3 Hours.**

Prerequisites CS 2620 and CS 3410. Definition of artificial intelligence, Common Lisp, logic programming, search techniques, knowledge representation including schemas and scripts, ART-enterprise as an expert system, and principles of expert systems.

**CS 6825. Neural Networks. 3 Hours.**

Prerequisites MATH 2150 and MATH 2262. Concepts pertaining to neural networks including: definition of neural intelligence, basic neural computational models, learning: supervised and unsupervised, knowledge bases neural networks, back-propagation neural networks, radial basis neural networks.

**CS 6830. Computer Graphics. 3 Hours.**

Prerequisites CS 3410 and MATH 2150. A survey of graphics systems and graphics programming topics include output primitives, transformations and viewing, modeling, user interfaces, and interactive methods. Both 2-D and 3-D concepts are discussed.