COURSES FOR NON-COMPUTER SCIENCE BACHELOR DEGREE HOLDERS. FOR GRADUATE STUDENTS ONLY!!!

DEFICIENCY PREREQUISITES COURSES

CSE 100* PRINCIPLES OF PROGRAMMING with C++ (3)
Principles of problem solving using C++, algorithm design, structured programming
fundamental algorithms and techniques, and computer systems concepts. Social and ethical
responsibility. Lecture, lab. Prerequisite: MAT 170.

CSE 110* PRINCIPLES OF PROGRAMMING WITH JAVA (3)
Concepts of problem solving using Java, algorithm design, structured programming, fundamental
algorithms and techniques, and computer systems concepts. Social and ethical responsibility.
Lecture, lab. Prerequisites: MAT 170.

CSE 120 DIGITAL DESIGN FUNDAMENTALS (3)
Number systems, conversion methods, binary and compliment arithmetic, Boolean algebra,
circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits. Lectures, lab.
Cross-listed with EEE 120. Prerequisite: Computer Literacy.

CSE 205 OBJECT-ORIENTED PROGRAM AND DATA STRUCTURES (3)
Problem solving by programming with an object-oriented programming language. Introduction
to data structures. Overview of computer science topics. Fee. Prerequisite: CSE 100 or 110 or
instructor approval.

CSE 220** PROGRAMMING FOR COMPUTER ENGINEERING (3)
Introduces procedure programming languages (C/C++) and hardware descriptive language
(VHDL). Fee. Prerequisites: CSE 120 (or EEE120), 205

CSE 230 COMPUTER ORGANIZATIONS AND ASSEMBLY LANGUAGE PROGRAMMING (3)
Register-level computer organization. Instruction set architecture. Assembly language.
Processor organization and design. Memory organization. IO programming, Exception/interrupt
handling. Fee. Prerequisites: CSE 100 (or 110), 120 (or EEE 120).

CSE 240** INTRODUCTIONS TO PROGRAMMING LANGUAGES (3)
Introduction the procedural (C/C++), applicative (LISP/Scheme), and declarative (Prolog)
languages. Lecture, lab. Prerequisite: CSE 205.

MAT 243 DISCRETE MATH STRUCTURES (3)
Logic, sets, functions, elementary number theory and combinatorics, recursive algorithms, and
mathemtical reasoning, including induction. Emphasizes connections to computer science.
Prerequisites: 1 semester of calculus or computer programming.

*CSE 100 or 110
**CSE 220 or 240
GRADUATE ADMISSIONS DEFICIENCY COURSES

CSE 230  COMPUTER ORGANIZATIONS AND ASSEMBLY LANGUAGE PROGRAMMING
(3)
Instruction set architecture, processor performance and design, data path, control (hardwired, micro programmed), pipelining, input/output. Memory organization with cache, virtual memory. Prerequisites: CSE 100 (or 110), 120 (or EEE 120).

CSE 310  DATA STRUCTURES AND ALGORITHMS
(3)
Advanced data structures and algorithms, including stacks, queues, trees (B, B+, AVL), and graphs. Searching for graphs, hashing and external sorting. Prerequisite: CSE 220 or 240; MAT 243.

CSE 340  PRINCIPLES OF PROGRAMMING LANGUAGES
(3)
Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms. Formal syntactic and semantic descriptions, compilation and implementation issues, and theoretical foundations for several programming paradigms. Prerequisites: CSE 230, 310

CSE 355  INTRODUCTION TO THEORETICAL COMPUTER SCIENCE
(3)
Introduction to formal language and automata, Turing machines decidability/undecidability, recursive function theory, and complexity theory. Prerequisite: CSE 310.

CSE 360  INTRODUCTION TO SOFTWARE ENGINEERING
(3)
Software life cycle models; project management, team development environments and methodologies; software architectures; quality assurance and standards; legal, ethical issues. Fee. Prerequisite: CSE 220 or 240.

CSE 430  OPERATING SYSTEMS
(3)
Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, file systems. Fee. Prerequisites: CSE 230 (or EEE 230), 310.