

**CIDSE COMPUTER SCIENCE**  
**DEFICIENCY PREREQUISITES COURSES**

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

Lower division courses may be taken at local community colleges.

Please visit [www.aztransfer.com](http://www.aztransfer.com) for course equivalencies.

**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 and lab.

**Prerequisite: None**

**CSE 120 DIGITAL DESIGN FUNDAMENTALS (3)**

Number systems, conversion methods, binary and complement arithmetic, Boolean algebra, circuit minimization, ROMs, PLAs, flipflops, synchronous sequential circuits. Lectures and lab.

**Prerequisite: Computer literacy recommended.**

**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.

**Prerequisite: CSE 110 or instructor approval.**

**CSE 220\*\* PROGRAMMING FOR COMPUTER ENGINEERING (3)**

Introduces procedure programming languages (C/C++) and hardware descriptive language (VHDL).

**Prerequisites: CSE 120 or EEE120; and CSE 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.

**Prerequisites: CSE 100 or CSE 110; and CSE 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 mathematical reasoning, including induction. Emphasizes connections to computer science.

**Prerequisites: MAT 210, MAT 251, MAT 265, or MAT 270.**

**\*\*CSE 220 or CSE 240 Acceptable**

**CIDSE COMPUTER SCIENCE**  
**GRADUATE ADMISSIONS DEFICIENCY COURSES**

**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.

**Prerequisites: CSE 100, CSE 110, CSE 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 CSE 240; and 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.

**Prerequisites: CSE 230 and CSE 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.

**Prerequisite: CSE 220 or CSE 240.**

**CSE 330    OPERATING SYSTEMS (3)**

Operating system structure and services, processor scheduling, concurrent processes, synchronization techniques, memory management, virtual memory, input/output, storage management, file systems. \*This course was previously CSE 430.

**Prerequisites: CSE 230 or EEE 230; and CSE 310.**