

CSCE 212 - Introduction to Computer Architecture

Credit Hours: 3 hours

Contact Hours: 3 lecture hours

Instructor: Dr. Jason Bakos

Required Textbooks: *Computer Organization and Design: The Hardware/Software Interface* (5th edition) by David Patterson and John Hennessy, Morgan Kaufmann Publishers.

Bulletin Description: Computer architecture, components, and organization; memory addressing; Input/Output; instruction sets; interrupts; assembly-language programming.

Prerequisites: CSCE 211 and either 145 or 206

Required Course in CE and CS programs

Learning Outcomes: Students will be able to:

1. Describe the microstructure of a processor.
2. Describe how conventional machine instructions operate in conjunction with the components of a computer.
3. Demonstrate the ability to program a microprocessor in assembly language.
4. Classify and describe the operation of parallel computer architectures.
5. Evaluate the performance of computers.

Student (Program) Outcomes addressed by course (Detailed mappings of these course outcomes to the Student Outcomes of the programs are in the detailed syllabus and the Assessment plan.)

Student Program Outcomes	SOs supported	SOs Moderately supported
Computer Engineering	a, c, e, k	
Computer Information Systems		
Computer Science	a, b, c, i	

Topics covered:

1. General Overview of Computer Architecture
2. MIPS Instruction Set Architecture- Assembly Language Paradigm
3. Floating Point Algorithms
4. Performance
5. Processor Design
6. Memory Hierarchy
7. Multicore and multiprocessor architectures