

**CSCE 210 - Computer Hardware Foundations**

**Credit Hours: 3 hours**

**Contact Hours:** 3 lecture hours

**Instructor:** Dr. Matt Thatcher

**Required Textbooks:** *The Architecture of Computer Hardware, Systems Software, & Networking: An Information Technology Approach*, 5th Edition, by Irv Englander (January 2014), Wiley (ISBN: 978-1-118-32263-5) (Paperback)

**Bulletin Description:** Number representation, data formats, CPU and memory organization, assembly language, I/O and peripherals, computer networks.

**Prerequisites:** CSCE 145, 204, 205, 206, or 207

**Required Course** in CIS programs

**Learning Outcomes:** Students will be able to:

1. Describe the major storage formats for data,
2. Represent integers, floating point numbers, and character data,
3. Describe the major components of a computer system and state their functions and purpose,
4. Explain how conventional machine instructions operate in conjunction with the components of a computer,
5. Demonstrate the ability to program in assembly language,
6. Explain the fundamental concepts and implementation options for input and output.

**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		
Computer Information Systems	i	a, b, c
Computer Science		

**Topics covered and approximate weight:**

1. Data representation (9 hours)
2. Computer organization (3 hours)
3. Assembly language (9 hours)
4. I/O and peripherals (6 hours)
5. Memory hierarchy (3 hours)
6. Distributed systems (3 hours)
7. System examples (5 hours)
8. Reviews, examinations, etc. (4 hours)