



COURSE NUMBER: CSCI 250

CREDITS: 3

**COURSE TITLE: INTRODUCTION TO
COMPUTER SYSTEMS**

**PREREQUISITES:
CSCI 150**

Weekly Hours: 4	Lecture: 2.5	Lab: 1.5	Total Hours: 4	Total Weeks: 13
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COURSE DESCRIPTION:

This course focuses on computer systems and low-level programming. The major topics are the relationship between the computer architecture (the hardware) and the applications that run on it (the software), and the issues that influence the design of both. Programs will be written in both C and x86-64 assembly, and may involve some GNU tools in the Linux environment. We will explore how instructions are encoded and executed and how binary data types are encoded and interpreted by computer hardware, and how these matters relate to the performance and reliability of your applications.

TEXTBOOK:

Computer Systems Mastering Engineering with Pearson eText -- Standalone Access Card

Computer Systems: A Programmer's Perspective, 3/E, Randal E. Bryant, David R. O'Halloran, Pearson, 2016, 9780134071923, Can be ordered directly online from Pearson or from the Bookstore

LEARNING OUTCOMES:

By successful completion of this course, the students are expected to know the following contents:

- Machine language programs
- Representation of symbolic and numeric data
- Representation of instructions (instruction set architecture)
- Machine code optimization
- Basic digital systems
- CPU organization



- Memory organization
- Threads and synchronization (time permitting)

COURSE CONTENT:

Week	Topic	Chapter
Week 1	Introduction to the computer systems	1
Week 2		1
Week 3	Representation and manipulation information	2
Week 4	Quiz 1	2
Week 5	Machine-Level Representation of Program	3
Week 6		3
Week 7	Midterm Exam	
Week 8	Processor Architecture	4
Week 9		4
Week 10	Optimizing Program Performance	5
Week 11	Quiz 2	5
Week 12	The Memory Hierarchy	6
Week 13		6

EVALUATION:

Class Participation	5%
Assignment/Labs	5%
Quizzes	20%
Midterm	25%
Final exam	45%
Total	100%

Midterm and Final Exam – The format for all exams is three hours, closed book and written exam.

Cheating: Students cheating on tests and exams will receive a “F” grade in this course.

If a student misses an exam, a mark of zero will be assigned unless there are extenuating circumstances. In such cases, the proportion of grade assigned to the missed exam will be added to the proportion assigned to the final exam. The final exam will be held during exam week. NO consideration will be given to any student wishing to write the exam at any other time than that assigned.



It is a student's responsibility to know and follow the school's policies regarding cheating on exams.

The school's policy regarding electronic devices is that any student who has a cell phone or other unauthorized electronic device (ie. Ipad, laptop, playbook, etc.) on their person or around their desk during an exam will be guilty of cheating and will a grade of "F" for the course.