



THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Overview of Computer Systems For Non-Majors

CSE 3430

Credit Hours:

4.00

Course Levels:

Undergraduate (1000-5000 level)

Course Components:

Lecture

Course Description:

Introduction to computer architecture and organization at machine and assembly level; pointers and addressing using C programming; introduction to operating system concepts: process, memory management, file system and storage, and multi-threaded programming.

Prerequisites and Co-requisites:

Prereq: 2122, 2123, or 2231; and 2321; and enrollment in Data Analytics major or CIS minor.

Course Goals / Objectives:

- To be competent programming with pointers in C
 - To be competent with application development and debugging in Unix environments
 - To be familiar with overall organization and design of computer systems
 - To be exposed to representation and manipulation of information in computer systems
 - Be competent with process concepts
 - Be familiar with memory hierarchy, storage, and I/O
 - Be familiar with process synchronization and threads.
 - Be familiar with multi-threaded programming.
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Course Topics:

- Transitioning from Java/C++ to C, Basic C syntax, working in Unix Environments
 - C pointers and memory allocation/deallocation and programming dynamic data structures with C
 - Other misc C features: I/O operations, bit operations, function pointers, command line argument passing
 - Debugging in Unix with gdb/xgdb, Use of Makefile, Other Unix features
 - Introduction to Computer Systems Organization
 - Integer representation and arithmetic, floating point
 - Memory hierarchy (including basics of virtual memory)
 - Process management
 - Process synchronization and concurrent programming
 - Input/output
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Designation:

Elective