

ENEE350H-Fall 2011

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Lecture Room: ENG 2116

Lecture Schedule: TuTh 12:30-1:45 pm

Textbook: Course notes

Assignments and Exams:

Homework: 30%

Midterm: 35% each: November 3rd, Thursday

Final: 35%: TBA

UMD-Syllabus:

Prerequisite: A grade of C (2.0) or higher in all required 200-level ENEE courses and permission of department. Electrical Engineering and Computer Engineering majors may not substitute CMSC311 for ENEE350. For ENEE and ENCP majors only. Not open to students who have completed ENEE250. Formerly ENEE250. Structure and organization of digital computers. Registers, memory, control and I/O. Data and instruction formats, addressing modes, assembly language programming. Elements of system software, subroutines and their linkages. For general honors students only.

Tentative Topics:

1. Overview of Computer Systems
2. Languages, Levels and Virtual Machines
3. System Level Computer Organization
4. Processor Specification and Design
 - Assembly Language Level (machine programs subroutines)
 - Machine-Level Organization (Instruction Set Architectures)
 - Micro-Level Organization-Microarchitectures
5. Memory Systems
 - Hierarchical Memory Design
 - Memory Management (Software Layer)
 - Virtual Memory (Hardware Layer)
6. Input/Output Systems, Polling, Interrupts
7. Metrics of Performance
 - Cost, Speed, Efficiency, Throughput, Utilization
 - Performance Tradeoffs-Amdahl's Law
 - Increasing Throughput Using Pipelining