Course: ECE 36200 - Microprocessor Systems and Interfacing

Type of Course: Required for the CmpE and EE programs

Catalog Description: An introduction to basic computer organization, microprocessor instruction sets, assembly language programming, and microcontroller peripherals.

Credits: 4

Contact Hours: Class: 3, Lab: 3

Prerequisite Courses: ECE 27000, ECE 29300, CS 227 or ENGR 221

Corequisite Courses: ECE 38800

Prerequisites by Topics: Digital logic design, computer programming.

Textbook:


Course Objectives: The objective of this course is to become familiar with the architecture and the instruction set of an Intel microprocessor. Assembly language programming will be studied as well as the design of various types of digital and analog interfaces. The accompanying lab is designed to provide practical hands-on experience with microprocessor software applications and interfacing techniques.

Course Outcomes: Students who successfully complete this course will have demonstrated:

1. Understanding of the Intel 8086/8088 architecture. \(a, k\)
2. Knowledge of the 8086/8088 instruction set and ability to utilize it in programming. \(a, g, k\)
3. Understanding of the Intel 8086/8088 real mode memory addressing. \(a, k\)
4. Ability to interface various devices to the microprocessor. \(a, b, c, e, g, k\)
### Lecture Topics
1. Review of number systems
2. Intel 8086/8088 microprocessor architecture and real mode memory addressing
3. Intel microprocessor addressing modes
4. Assembly language programming and debugging
5. Intel 8086/8088 hardware specifications
6. Memory interfacing
7. I/O interfacing
8. Analog-to-Digital and Digital-to-Analog conversion interface
9. Serial transmission

### Computer Usage
High

### Laboratory Experience
High

### Design Experience
High

### Coordinator
Yanfei Liu, Ph.D.

### Date
31/3/11