CDAC3331: Introduction to Microcomputer Systems
Spring 2005, Davie Campus, LA 152, TTh 7:10-9:00 pm

Instructor: Dr. Michael VanHilst

Office Hours:
Davie LA 322: Tuesday 5:30 - 7:00pm, Thursday: 9:00 - 10:00pm
Boca SE 402: Tuesday 9:30 - 11:00am, Thursday: 3:00 - 4:00 pm

Catalog Description: CDA3331C Introduction to Microcomputers

4 Credits *Prerequisite: CDA3201C and COP2220 (strictly enforced)*
Architecture of a 32-bit microprocessor; addressing modes, instruction set, assembly language programming, program design, hardware model, exception handling and interface to memory and peripherals. Training kits will be used in the lab to run assembly programs. C cross compiler may be used for the course project.

Course Objectives

1. To learn the fundamental hardware and software structures of microprocessors.
2. To learn the basic concept of microprocessor-based control systems.
3. To develop basic to moderate skills in assembly language programming.
4. To learn basic interface between computing systems and real-world devices.
5. To demonstrate knowledge by performing 5 simple to moderate lab exercises using a 68000 MP board.

Student Learning Outcomes

1• SLO#1 Proficiency in the areas of electronics, computer architecture and computer design.
2• SLO#3 An ability to plan and execute an engineering design to meet an identified need.

Text

Antonakos, James L., The 68000 Microprocessor, Hardware and Software Principles and Applications, 5E, Upper Saddle River, New Jersey, Prentice Hall, Inc., 2004.
CD with the text: includes all source files presented in the book. Three programs, COM68K, ASM68K and EMU68K, are provided to compile, assemble, and execute (emulate) 68000 programs on a PC.

Lab

The course includes lab experiments, which are mainly assembly language programs. You will use the software in the lab to edit, assemble, and load your programs to the 68000 boards to run them. These experiments are designed to put learned concepts into actions.

Grading Policy

Grades will be determined primarily from the following:
5 quizzes/homework: 50 points, 5 lab assignments:25 points, final exam:25 points = 100 pts
It is for your advantage to read ahead and promptly solve all assigned homework problems. On the due date, you will either submit parts of your homework assignment or take a quiz. Once solutions are given out, missed assignments and quizzes will receive a zero grade. Depending on the overall performance of the class, a quiz#6 may be given and then the lowest quiz of the six will be dropped.

Office Hours and Policy Changes

Office hours are posted on the office door and on my web site. Other times available by appointment. If needed, office hours and class policies may change during the semester. If so, the changes will be announced in class and posted on the web

Course Outline

1. Preliminaries
2. Introduction to the 68000
3. Addressing modes
4. Instruction set
5. Assembly programming
6. Interrupt processing