EEE174 Course Syllabus

**PREREQUISITES:** Junior standing, CpE 64.

*By Topics:*
1. Binary number system.
2. Combinational and sequential logic.
3. Arithmetic Logic Units (ALUs)
4. SSI/MSI chips: registers, memories and counters.
5. Programming in a high-level language, e.g. C, Fortran. (optional)

**COURSE OBJECTIVES:**
1. To understand the principles and techniques of machine-level programming.
2. To learn the organization of a real microprocessor.
3. To learn to use computers for real time data acquisition and control of input-output devices.
4. To design and implement assembly language programs using MASM assembler.
5. To debug programs using Debug & CodeView.
6. Familiarize electrical engineering students with the basics of hardware architectures, machine language, assemble language, basic data types and elementary data structures, programming of peripheral chips, exception and interrupt handling, timing.

**LECTURES:**

Exams: There will be two midterms and a final exam. The midterms and final exam will be open book. The lecture exams and Homework assignments will account for 3/4 (75%) of the course grade.

**LABORATORY:**

The Laboratory is used to assemble, link, test and debug and run various programming assignments. Lab is used mainly to get help from the instructor, for demonstrating your program, and to turn your lab report in when due. LAB Assignments: To receive full credit for a lab you must demonstrate your correctly working program to the instructor on the day that the demonstration is due.

**Labs:** There are up to 8 labs. The total score of lab is 1/4 (25%) of the total course grade. Each Lab will have a pre lab, lab demo, and lab report.

**Programming:**

Programming will require spending some time on the departmental (or preferably your own) PCs. We will be using the Microsoft assembler MASM and the Programmers’ Workbench package for editing, loading, running, and debugging. We will also use the Microsoft debug tool called CodeView.

**Grading:** The final grade for EEE174 will be a merger of Lecture & Lab (75% for Lecture and 25% Lab). Important - You must pass both lecture and lab independently to pass this course! Homework: Homework assignments will be made. It is to your advantage to know how to do the assignments because many similar problems will appear on the exams.
TEXTBOOKS:


Designed for undergraduate courses in assembly language programming.


Other Books for reference:

- Valvano, Jonathan W.; Embedded Microcomputer Systems: Real Time Interfacing; Copyright @ 2000 by Brooks/Cole – A division of Thomson Learning, ISBN: 0 534-36642-2
- Lewis, Daniel W.; Fundamentals of Embedded Software where C and assembly meet; Copyright @ 2002 by Prentice Hall, ISBN: 0-13-061589-7

ACADEMIC INTEGRITY:

The faculty of the Department of Electrical and Electronic Engineering expects all students to conduct their academic work with the high ethical standards of the engineering profession.

Each exam and programs must represent your own work. You may help other students by discussing assignments, but you must not copy anyone’s solution. Violations of these standards of academic integrity will result in appropriate action.

Professionalism:

Employers frequently call faculty before hiring new graduates. The first question generally serves to verify that the student knows the ECS material. All the remaining questions cover the student’s professionalism: integrity, punctuality, dependability, ability to work with others, and ability to follow instructions! The faculty at CSUS knows many of the employers, and it is very important to us that our graduates meet the highest standards of professional responsibility. Thus you will absolutely be required to meet the lab deadlines in this class and they must be turned in at the time and date specified. Late assignments will not be accepted; all students must be present for all exams: do not schedule any travel prior to your exams. Failure to meet these standards will result in a grade of 0 for the lab assignment or exam missed. Allowances may be made for verified illness.

ABSOLUTELY NO CHEATING WILL BE TOLERATED! The penalties for cheating may include an F for the exam and/or for the course.