CS240 **Computer Organization and Assembly Language**
Spring 2005 **Dr. Seymour Goodman**

Course Contents:

This course will start with a review of basic logic functions and their use in the synthesis of more complex combinational circuits. We will discuss the electronic implementation of these functions and then use them to form some simple sequential circuits. After looking at the major components of a computer and reviewing the assembly language instructions necessary to implement algorithms, we will look at the representation of various types of data within the computer and develop the circuits needed to perform arithmetic operations. We will look at examples of some real computers and discuss the differences between RISC and CISC. This material corresponds to Chapters 1, 2, Appendices A, B, and C, and parts of Chapters 3, 5, and 6 of your primary textbook.

Required Textbooks:

The primary text for the course is "Computer Systems Design and Architecture 2nd edition" by Vincent Heuring and Harry Jordan, ISBN: 0-13-048440-7, Prentice Hall, 2004. Many students have found that the Schaum's Outline, "Introduction to Digital Sysyems", by Palmer and Perlman, McGraw Hill, 1993, ISBN: 0-07-048439-2, gives solved problems that are useful in studying for the first half of the course.

Lecture Notes:

In order to facilitate your taking notes in the course, you can download all of the slides that I will show from my Web site. They will be available as ".zip" files. When extracted each will give an individual file that contains the slides for a chapter in ".pdf" format or a file containing the errata for the book. In order to view or print the slides you will need the Adobe Acrobat reader. You will find a link to it on my web site. Please note that most of the slides are those for the first edition of the book and will not match the figure numbers in the new edition. As the author provides me with the new slides, I will notify you by e-mail and make them available at my web site.

Projects:

You will need a logic simulation package to design and simulate various circuits and you will be asked to turn in output from the program from time to time. My website discusses several simulation programs and tells you how to obtain them.

In addition, you will be asked to write and debug assembly language for the "SRC" computer. Those of you who have PC's at home running Windows 95/98/ME/XP will be able to download the software from my Web site.

The projects will not be graded, only the fact that you submitted them will be recorded. If your final mark is between 2 grades, you will receive the higher grade if you have submitted answers to all of the projects; you will receive the lower grade if you have not submitted them.

Examinations and Term Grade:

I will give a midterm and final that each account for 50% of your grade. Please note that neither makeup examinations nor incompletes will be given in this course.

Questions:

You can ask me questions at any time by e-mail (**Goodman@Computer.Org**). I will try to respond within a few hours except for the period from Friday afternoon to Saturday night. I will also send material to the class by e-mail. It is therefore important that you check your e-mail frequently and that you inform me of your e-mail address. ***Before the next class please send me an e-mail message that gives your name. Please note that my e-mail program uses automatic filtering. It is therefore necessary for you to include your course number, CS240, in the Subject line of your message.*** If you would like to meet with me before the class, please send me e-mail at least 24 hours in advance.

Missed Classes:

I will miss 2 classes this semester. In order to make up the time that is missed, it will be necessary to extend each class by 7 minutes to 7:52 PM.