EE14 Microprocessor Architecture and Applications
Fall Semester 2002

Welcome to EE14 Microprocessors! All course notices and assignments are posted on the web as well as in the ECE office.
In this course, we will investigate the; microprocessor with a comparative analysis of some popular forms; memory devices, interface and other support circuitry; assembly language and machine language programming; microprocessor use in dedicated applications. The course includes a laboratory devoted to software and hardware design. This is a required course for Computer and Electrical Engineers. You will have fun!

Required Textbooks:

- "Microprocessors and Microcomputers--Hardware and Software" Sixth Edition by Ronald J.Tocci, Prentice Hall, Upper Saddle River, New Jersey. ISBN: 0-13-060904-8.

References:

- EE14 Workbook (required)
- "Software and Hardware Engineering", Motorola M68HC12 by Fredrick Cady and James Sibigiroth, Oxford University Publisher.

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Lab Teaching Assistants:
TA: Shu Chen
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Tentative Schedule:

1. Basic microprocessor architecture, the bus structure and memory map
2. The 68HC12 microcontroller and its architecture
3. Instruction set of the 68HC12 and writing simple programs
4. Subroutines, passing parameters and relocatable program modules
5. Design of memory systems for the microprocessor
6. Input-output structure for the microprocessor: Isolated and Memory-mapped I/O
7. Design of program-controlled I/O systems
8. Design of interrupt-controlled I/O systems
9. Direct Memory Access
10. Handshake I/O and serial I/O

Quiz: There will be a quiz given every Thursday. The best 5 quiz grades will be counted. No make-up quizzes will be given.
Homework: There will be a homework assignment due every Wednesday at the beginning of class. Homework assignments will be posted every Wednesday on the web at http://www.eecs.tufts.edu/~karen/Classes.html under EE14. Every handout or assignment is also available in the EECS office. Solutions to the homework will be placed in a book in the EECS office a week after the due date. No late homework will be accepted for a grade after the solutions have been posted in the EECS office. Late homework will be downgraded. PLEASE DO NOT put homework under my door or they will be marked late. If you need to pass in an assignment early, ask the EECS secretaries to datestamp it and place it in the mailbox of the Teaching Assistant.
Lab: There will be a series of labs consisting of assembly language programming and hardware interfacing for the 68HC12 microcontroller. Moreover, a group project will be scheduled as your final project of this class. **LABS ARE REQUIRED.** If you do not satisfactorily pass the laboratory component of the course **(70%)** you will **FAIL** the course. Late labs will be downgraded.

Labs will be held in Room H225 (upstairs).
Examinations: There will be a mid-term exam and one final exam. The hour-exam will be given in class on **Tuesday, October 22, 2002**. The final exam will be announced according to the university schedule. If you have a schedule conflict at any of the exam times for some unexpected reason, please contact me or the EECS secretaries as soon as possible.

To encourage professionalism and attendance, I will add 5 points to the final exam score for any student that is present each time I call on her/him in class. Students that must miss class must send email BEFORE the class begins to avoid losing the bonus 5 points.
Grading: There is a two week grading review period for any grade that you would like to have reconsidered if you think we missed something that should have been considered. This means that you have 2 weeks after an assignment, lab, exam or quiz is handed back to have it re-graded should you feel there was an oversight in the grading. You must submit your request in writing by using an official grievance form available on this page http://www.eecs.tufts.edu/~karen/EE14/Grievance_Sheet.pdf.

Course Grading

Homework Average	10%
Quizzes	15%
Lab	20%
Mid-term exam	25%
Final Exam	30%
Total	100%