

ECE/CS 252: Introduction to Computer Engineering

Fall 2010, Section 3

Attendance is required		URL: http://ece252.ece.wisc.edu/				
Lecture: M(WF) 11-11:50 Soils 270		Text: Introduction to Computing Systems: from bits and gates to C and beyond; Yale N. Patt and Sanjay J. Patel; Mc-Graw Hill, 2003, 2nd edition				
Discussion: WF time/loc varies		Patt and Sanjay J. Patel; Mc-Graw Hill, 2003, 2nd edition				
Instructors/TAs:	Prof. Mikko Lipasti	Daniel Chang, lead TA	Philip Garcia	Sean Franey	Vignyan Kothinti Naresh	Felix Loh
Contact info:	EH4613, 265-2639 mikko@ece.wisc.edu	dwchang@ wisc.edu	pcgarcia@ wisc.edu	sfraney@ wisc.edu	kothintinare@ wisc.edu	floh@wisc.edu
Office hours	M3:30-4:30, R11-12 in EH4613	W3:30-5:30 EH B622	M2-4 EH B622	R10-12 EH B622	T3-5 EH B622	F2-4 EH B622
Grading:		I strongly encourage you to meet with us during office hours, or call us or send e-mail.				
Pop quizzes	25%	Introduce yourself, express concerns, offer suggestions, and seek advice.				
Homeworks	25%	Make sure you monitor the web site for this course which contains course information,				
4 Midterm exams	50%	lecture notes, pointers to project resources, and the latest announcements.				

Course Description and Course Objectives

This course is intended for first-year students, to serve both as a general introduction to engineering for all engineering majors, but also as a foundational course for the computer engineering and computer science degree programs. The course provides bottom-up coverage of the critical concepts in the operation and design of computing systems, starting with transistors, then logic gates, then complex logic structures, then gated latches and memory. The course removes all of the mystery about the operation of computer systems by methodically and progressively explaining the implementation and behavior of each important layer of abstraction in a computer system.

The course will also explore the increasingly pervasive role that computing devices--particularly those embedded in appliance-like systems--play in modern society, as well as the historical importance of computing as a powerful tool and enabler for virtually all engineering and scientific disciplines. Within that context, the course will discuss the ethical, economic, social, and political impacts that computers have had on our society in the past fifty years and will continue to have in the future. There are no prerequisites for this course.

The course will provide students with:

1. A basic understanding of several aspects of computer engineering practice, including basic hardware design and low-level assembly-language programming.
2. Awareness of some of the ethical, social, political, and economic influences on and impacts of engineering.
3. Introductory skills in teamwork with peers.
4. Experience in written and oral communication with an engineering audience.
5. Preliminary development of the habits of mind that engineering study and practice require.
6. Elementary knowledge of other disciplines in engineering.

Small-group Quizzes and Homework Assignments

You will be divided into small groups within your discussion section, and will be required to complete in-class quizzes both individually and in these groups. In addition, there will be approximately eight homework assignments (about one every other week) which may not be weighted equally. Some assignments will require the review of material that is touched upon, but not covered in depth in class. Most of the homework assignments must be completed in the assigned discussion section groups. Each group should submit only one completed homework, and all members of the group will receive the same grade. The intent here is to encourage you to develop relationships with your fellow students and form study groups; these connections will prove invaluable in your later engineering courses. You will not receive full credit if you complete group homework assignments individually (not in a group). No late homework will be accepted.

Course Outline (subject to change)

<u>Week</u>	<u>Date</u>	<u>Chapter</u>	<u>HW Out</u>	<u>Due</u>
0	Sep 03, Fri	Course Introduction	H1	
1	Sep 06, Mon Sep 08, Wed Sep 10, Fri	Labor Day, no lecture Ch 1 - Welcome Aboard Discussion		
2	Sep 13, Mon Sep 15, Wed Sep 17, Fri	Ch 2 - Bits, Data Types, & Ops Discussion Discussion	H2	H1
3	Sep 20, Mon Sep 22, Wed Sep 24, Fri	Ch 2 - Bits, Data Types, & Ops Discussion Discussion - Exam Review		H2
4	Sep 27, Mon Sep 29, Wed Oct 01, Fri	Ch 3 - Digital Logic Structures Midterm I (Ch. 1-2) Discussion	H3	
5	Oct 04, Mon Oct 06, Wed Oct 08, Fri	Ch 3 - Digital Logic Structures Discussion Discussion	H4	H3
6	Oct 11, Mon Oct 13, Wed Oct 15, Fri	Ch 4 - Von Neumann Model Discussion Discussion		
7	Oct 18, Mon Oct 20, Wed Oct 22, Fri	Ch 5 - LC-3 Discussion - Exam Review Midterm II (Ch. 3-4)		H4
8	Oct 25, Mon Oct 27, Wed Oct 29, Fri	Ch 5 - LC-3 Discussion - LC3 Demo Discussion	H5	
9	Nov 01, Mon Nov 03, Wed Nov 05, Fri	Ch 6 - Programming Discussion Discussion	H6	H5
10	Nov 08, Mon Nov 10, Wed Nov 12, Fri	Ch 7 + 9.2 - Assembly Language Discussion Discussion		
11	Nov 15, Mon Nov 17, Wed Nov 19, Fri	Ch 7 + 9.2 - Assembly Language Discussion - Exam Review Midterm III (Ch. 5-6)		H6
12	Nov 22, Mon Nov 24, Wed Nov 26, Fri	Ch 8 + 9.1 - I/O Discussion - H7 project help THANKSGIVING RECESS	H7	
13	Nov 29, Mon Dec 01, Wed Dec 03, Fri	Ch 8 + 9.1 - I/O Discussion Discussion - H8 project help	H8	H7
14	Dec 06, Mon Dec 08, Wed Dec 10, Fri	Engineering Ethics Discussion - Ethics exercise Discussion - Exam Review		H8
15	Dec 13, Mon Dec 15, Wed	Summary and course evaluations Midterm IV (Ch. 7-9)		