

ECE/CS 252: Introduction to Computer Engineering

Fall 2011, Section 2

Attendance is required		URL: http://ece252.ece.wisc.edu/				
Lecture: M(WF) 11-11:50 Ani Sci 212		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						
Instructors/TAs:	Prof. Mikko Lipasti	Sean Franey, lead TA	Vamsi Ithapu	Dustin Kreft	Ripudaman Singh	Preeti Agarwal
Contact info:	EH4613, 265-2639 mikko@engr.wisc.edu	sfraney@ wisc.edu	ithapu@ wisc.edu	dkreft@ wisc.edu	rsingh27@ wisc.edu	pagarwal7@ wisc.edu
Office hours	T 9-11 EH4613	W 2:30-4:30 EH B632	R 2-4 EH B632	M 2-4 EH B632	R 10-12 EH B632	F 2-4 EH B632
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 bottoms-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 02, Fri	Course Introduction	H1	
1	Sep 05, Mon Sep 07, Wed Sep 09, Fri	Labor Day, no lecture Ch 1 - Welcome Aboard Discussion		
2	Sep 12, Mon Sep 14, Wed Sep 16, Fri	Ch 2 - Bits, Data Types, & Ops Discussion Discussion	H2	H1
3	Sep 19, Mon Sep 21, Wed Sep 23, Fri	Ch 2 - Bits, Data Types, & Ops Discussion Discussion - Exam review		H2
4	Sep 26, Mon Sep 28, Wed Sep 30, Fri	Ch 3 - Digital Logic Structures Midterm I (Ch. 1-2) Discussion	H3	
5	Oct 03, Mon Oct 05, Wed Oct 07, Fri	Ch 3 - Digital Logic Structures Discussion Discussion	H4	H3
6	Oct 10, Mon Oct 12, Wed Oct 14, Fri	Ch 4 - Von Neumann Model Discussion Discussion		
7	Oct 17, Mon Oct 19, Wed Oct 21, Fri	Ch 5 - LC-3 Discussion Discussion - LC3 Demo		H4
8	Oct 24, Mon Oct 26, Wed Oct 28, Fri	Ch 6 - Programming Discussion - Exam Review Midterm II (Ch. 3-4)	H5	
9	Oct 31, Mon Nov 02, Wed Nov 04, Fri	Ch 6 - Programming Discussion Discussion	H6	H5
10	Nov 07, Mon Nov 09, Wed Nov 11, Fri	Ch 7 + 9.2 - Assembly Language Discussion Discussion		H6
11	Nov 14, Mon Nov 16, Wed Nov 18, Fri	Ch 7 + 9.2 - Assembly Language Discussion - Exam Review Midterm III (Ch. 5-6)		
12	Nov 21, Mon Nov 23, Wed Nov 25, Fri	Ch 8 + 9.1 - I/O Discussion - H7 project help THANKSGIVING RECESS	H7	
13	Nov 28, Mon Nov 30, Wed Dec 02, Fri	Ch 8 + 9.1 - I/O Engineering Ethics Discussion - H8 project help	H8	H7
14	Dec 05, Mon Dec 07, Wed Dec 09, Fri Dec 10, Sat	Lecture cancelled Discussion - Ethics exercise Discussion - Exam Review Project demonstrations (all day)		H8
15	Dec 12, Mon Dec 14, Wed	Summary and course evaluations Midterm IV (Ch. 7-9)		
	Dec 21, Wed	No final exam		