

ECE 552: Introduction to Computer Architecture

Fall 2005

Instructor: Prof. Mikko Lipasti

Final Exam Review Information

The final exam will cover all topics discussed in class for material in Chapter 7, 8, and 9, and material from Chapter 4 (Ch. 3 in 3rd edition) on integer multiplication and division and floating point arithmetic. SECDDED codes will also be covered, based on the lecture notes and the additional handout posted on the web page (this material is not in the textbook). Finally, the coverage of superscalar out-of-order processors from lecture, as well as the content of the MIPS R10000 paper are included. Use the following table as a reference.

The exam will be closed book and closed notes. However, you are allowed to bring one double-sided 8.5"x11" cheat sheet that contains whatever reference information you would like. The focus of the exam will not be to test your ability to memorize details. Rather, details will be provided and you will be asked to think and solve problems given those details.

You will be expected to do simple paper-based logic design similar to the midterm (both combinational and sequential logic). You MUST USE FULLY SYNCHRONOUS DESIGN (FSD) in your solutions on the exam.

There will also be discussion questions on topics discussed in class and in the text.

Please answer exam questions using a pencil--scribbled-out mistakes in ink are unpleasant to grade, and make assigning partial credit difficult.

Week	Dates	Topics	Readings, 2nd Ed	Readings, 3rd Ed
0	9/2	Introduction	Ch 1	Ch. 1
1	9/7,9/9	Performance and Cost	Ch 2	Ch. 4
2	9/12,9/14,9/16	Instruction Sets	Ch 3	Ch. 2
3	9/19,9/21,9/23	Arithmetic I	Ch 4.1-4.5	Ch. 3.1-3.3
4	9/26,9/28,9/30	Datapath design	Ch 5.1-5.3	Ch 5.1-5.3, App. B
5	10/3,10/5,10/7	Control	Ch 5.4-5.9, App C	Ch. 5.4-5.12, App. C
6	10/10,10/12,10/14	Pipelining	Ch 6.1-6.7	Ch. 6.1-6.8, 6.11-6.13
7	10/17,10/19,10/21	Intro to Superscalar	Ch 6.8-6.9	Ch. 6.9-6.10
8	10/24,10/26,10/28	Review and Midterm 10/28		
9	10/31,11/2,11/4	Memory Technology	Ch 7.1, App B	Ch. 7.1
10	11/7,11/9,11/11	Memory Hierarchies	Ch 7.2 - 7.6	Ch. 7.2-7.9
11	11/14,11/16,11/18	Memory Hierarchies cont'd	Ch 7.2 - 7.6	Ch. 7.2-7.9
12	11/21,11/23	Arithmetic II	Ch 4.6 - 4.10	Ch. 3.4-3.10
13	11/28,11/30,12/2	I/O	Ch 8	Ch. 8
14	12/5,12/7,12/9	Out-of-order Superscalar	MIPS R10K paper	
15	12/12,12/14	Parallel Processing, Review	Ch 9	Ch. 9
16	12/16	Final Exam, 7:25pm Friday	--	