CE202 – Computer Architecture

General Information and Syllabus
January 4, 1996

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Office hours:	Wednesday 11:00–12:00
	and by appointment.

Meeting Times

Tuesdays and Thursdays, 2:00–3:45pm, AS 165.
No class on February 20.
Final on Tuesday, March 19, 12:00–3:00pm.

Readings

Computer Architecture: A Quantitative Approach, by J. L. Hennessy and D. A. Patterson, Second Edition, Morgan Kaufmann, 1995.

Various handouts.

Course Work

Homework: 20%.
Midterm: 20% (in class, on 2/6).
Final: 25%.
Project: 35%.

There will be five homework assignments. The tests will be open book and open note.

Project

The coursework includes a written report on a computer architecture project. The project will be of your choosing, and a list of possible topics will be distributed separately. Experimental projects are encouraged, but an indepth study of a current topic drawing from the literature is also acceptable.

In the case of an experimental project, the final paper should have three components:

- A review of a specific idea or subject, drawing from the course reader and the literature as a whole.

- The design and results of an experiment based on those ideas. There are dlx, MIPS, cache simulators, and csim in `/usr/public/CE202` on terra that may be useful. Verilog is also available.
- Analysis of the results of the experiment and suggestions of future research questions.

A project proposal giving an overview of the topic (similar to the first part of the final report), methods of analysis, and references will be due on February 8. A progress report, including background literature review, will be due on March 5. I plan to have each group (1 or 2 people) do some sort of presentation, the form of which depends on the size of the class. This may change the latter weeks of the syllabus.

The final report is due on March 19.

Approximate Syllabus

Week Of	Topics	Readings	HW Due
1/4	Introduction, performance	1	
1/9	Instruction sets, DLX, compilers and architecture	2	
1/16	Basic Pipelining, Hazards	3	1/16
1/23	Scheduling, ILP, Superscalar	4	
1/30	Memory Hierarchy	4–5	1/30
2/6	Cache, VM, Midterm (2/6)	5	2/8 (P)
2/13	Storage/RAID	6	2/13
2/22	Networks	7	
2/27	Parallel	8	2/27
3/5	Arithmetic, FP	A	3/5 (P)
3/12	Review		3/12
3/19	Final and project due		