CSE 548 - Syllabus

Instructor:
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Lecture: T,R 5:00 - 6:20 EE1 045
Final exam: There is no final, but there are 2 midterms.

Text: Computer Architecture: A Quantitative Approach
by Hennessy and Patterson

This will be (heavily) augmented by supplemental reading of significant research papers from the field.

The purpose of this course is to give you an advanced understanding of computer architecture.

Lecture:

My hope is to teach this class as a daily, wandering discussion of topics. If it turns into me lecturing and you taking notes, then both of us will not want to be here. As such, please come to class and expect to talk, to argue, to tell me why I'm wrong (and *I will be wrong*). The beauty of computer architecture is that there is so much wiggle room. There hardly ever is a really correct answer, so it makes for lively debate.

Reading:

You will be expected to read a lot. In addition to most of that huge book (H&P) you can expect to read 1-3 research papers a week. Usually along with the reading will be a brief assignment. This assignment is to jump start the in-class discussion.

Workload:

The primary contribution to your grade in this class will be a large research project that you and a partner will undertake. This research project is expected to be substantial in scope. In addition there will be some reading assignments and some problems assigned from the book.

Grading:
The grading will be roughly assigned from these percentages (subject to change):
40% Project + 10% Presentation; 20% Homework; 15% Quiz 1; 15% Quiz 2.

Geneva Conventions:

Late Policy: Anything (unless otherwise specified), may be turned in 1 day late so long as you email myself and the TA an excuse on or before the day it is due. Your excuse does not need to be true, but it must be formatted as a Haiku. Search the net for Haiku for formatting directions.

Midterms: While I am not a large fan of tests in graduate courses, since this is a "quals" course we will have a couple. They will be in-class, closed-note, closed-book.

Email1: If you ask me a question that has implications for the rest of the class, or is just generally interesting I may post the response to the class list server.

Email2: You should join the class list server. This class uses majordomo. To join the list, send email with the line "subscribe cse548" to majordomo@cs.washington.edu.

Email3: I do not keep "CS" hours. If you email me past 8pm I may very well be asleep. Responses early in the morning have been known to happen, however.

Sickness/Other Serious Matters: Of course if anything seriously bad happens to you during the quarter I will work with you to adjust due dates, etc. Seriously bad is defined as sickness that involved a doctor's visit, a death in the family, etc.

Academic Accommodations: To request academic accommodations due to disability, please contact disabled Student Services, 448 Schmitz, (206) 543-8924 (V/TTY). If you have a letter from Disabled Student Services indicating that you have a disability that requires academic accommodations, please present the letter to me so we can discuss the accommodations you might need in this class.

Remember: If you're not having fun, then it's probably not worth doing.

A *tentative* list of subjects:

- Evolution / Revolution / Reincarnation of instruction sets

- Instruction level parallelism: scoreboarding, Tomasulo's algorithm, VLIW/EPIC

- Memory Hierarchy (caches, the fetch stage)

- Characteristics of applications (locality, predictability, parallelism)

- Technology and scaling implications on architectures

- Multiprocessors