CSE 378 - Syllabus

Instructor:
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Teaching Assistants
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Office Hours: T 11:30 - 12:30 & W 12:30 - 1:30
R 2:30 - 3:30 & F 2:30 - 3:30

Lecture:	MWF	11:30 - 12:20 EE1 125
Discussion section 2488:	R	9:30 - 10:20 MGH 389
Discussion section 2489:	R	12:30 - 1:20 MEB 238
Final exam:	T	2:30 - 4:20, December 18th

Text: Computer Organization and Design: The Hardware/Software Interface
by Patterson and Hennessy

The purpose of this course is to give you a basic understanding of computer architecture and organization. We will cover machine organization, instruction sets, addressing modes, instruction encoding, subroutine handling, pipelining, microprogramming, memory systems, caches, I/O, and as time permits parallel architectures. The lectures on these topics are primarily taken from the text, but I often present material with a completely different slant than the book. To get the most out of lectures, you should read the appropriate chapters prior to those topics being discussed in class.

Grading: 45% Homework, 20% Midterm, 35% Final. There will be some English on the grading ball for participation.

Conventions:

Final: The final will be cumulative, but biased towards material from the latter half of the course.

Regrades: Any requests for re-grades must be made in writing, and within 7 days from the day I first hand the assignment/test back in class. This may be different than when you actually receive the assignment.

Late assignments: Anything can be turned in late by 1 day so long as you e-mail me an excuse on or before the day it is due. The excuse doesn't have to be a good one, in fact, it doesn't even have to be true, but if it's not good or true, at least try and make it funny. Extra days will not be given, no matter how amusing the reason.

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 cse378" to majordomo@cs.washington.edu.

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 your not having fun, then its probably not worth doing.

A *tentative* list of subjects:

Architecture Overview
- What is architecture?
- Binary number system

Instruction set architecture
- Overview of MIPS ISA computation instructions
- Data transfer and control instructions
- Other instructions and addressing modes
- Procedure calls
- Evolution of ISAs
- Comparing RISC & CISC

Performance metrics

Single-cycle implementations
- Datapath
- Control

Multi-cycle implementations

Microprogramming

Pipelining
- Data hazards
- Control hazards
- Modern pipelines

Memory
- Memory hierarchies
- Cache
- Virtual memory

Exceptions

Advanced topics