

Computer Organization

Spring 2005

Instructor: Dave Hollinger

www.cs.rpi.edu/~hollingd/comporg

Why CompOrg?

- Basic understanding of how computers work.
- Gentle introduction to Unix and C programming.
- Assembly Language programming
- Understanding Memory and I/O (these can have a large impact on performance).

Some Topics

- Data and Program Representation
- Instruction Set Architecture/Assembly Language Programming
- C Programming
- Logic Design & Processor Architecture
- Memory Hierarchy & Virtual Memory
- Performance

Grading

- Lab: 10% (one point each)
- 2 Midterm Exams: 15% each
 - Friday, Feb 18th
 - Friday, April 1st
- Final Exam: 25% *comprehensive final*
- Homework: 35%
 - a few large “projects”
 - a number of smaller assignments

Final Exam

- Roughly 50% will cover the last 1/3rd of the course.
- The rest will be comprehensive.
- The final is during finals week – I have no control over the scheduling of the exam.
 - Finals week is part of the semester – do not plan to be in Aruba that week!

Grading

- Grade appeals must be resolved within 7 days (after you receive a grade)!
 - First appeal is to the grader (often a TA).
 - See Dave only after you have talked to the TA that assigned your grade.

Homework

- Unless stated otherwise, homework must be done individually!
 - some of the large projects might be done in groups – this will be announced.
- Any duplicate or near duplicate submissions will result in a *minimum* of a 2 letter grade drop from the final course grade and may result in failure for the entire course.

x86 Unix Environment

- You will be given a remote-access account on computer running Linux.
- Other options:
 - RCS public Linux machines.
 - Linux/BSD on your own computers.
 - Cygnus tools (for windows) might also be useful.

Lab

- There will be about 12 labs, you can get credit for up to 10 of them (1 point each).
- Laptops required! (but only for remote access to CS Unix accounts).
- Each lab meeting will involve one or more exercises.
- Boolean grades (yes/no).
- Undergraduate TAs will help out in lab.
- Come to any lab section you want.
- There will be no makeups!

Lab Topics

- Unix skills
- C programming
 - data structures, data types, etc.
- Assembly programming and C to assembly conversions.
- Performance evaluation (benchmarking, memory measurements, timing, etc).

Textbooks

- Computer Systems book is required!
 - some assignments from the book.
 - focus on the issues that effect programmers
 - Intel X86 assembly language
 - Somewhat Unix oriented

Lectures

- I'll try to keep lectures to 90 minutes.
- Cover material from the book
- Demonstrations
- Discussions
- Dave's dorky videos @copyright 2005 DLH enterprises
- Review (Tuesday lecture before each midterm will be a review session)

Lecture Notes

- Lecture notes will be available on the course web site.
- We will be following the book pretty closely, so the book is your best resource.

Schedule

- The Syllabus includes a topic and reading list.
- The order will be as shown, but the dates will probably change a little.
- The test dates will not change!
- Lab meetings start next week (January 26th).