Lecture 1: Course Introduction

CSE 123: Computer Networks
Alex C. Snoeren

First Discussion Friday 10/4
Lecture 1 Overview

- Class overview
  - Expected outcomes
  - Structure of the course
  - Policies and procedures

- A brief overview of Computer Networking
  - High-level concepts
  - An end-to-end example
Personnel

- **Instructor:** Alex C. Snoeren
  - Office hours Tuesdays 2-3pm or by appointment
  - EBU3B 3114

- **Project/Discussion TAs:** Anup Chenthumarakshan & Narendran Thangarajan
  - Friday 3-3:50pm in Center 105
  - Office hours Mon 1-2pm/Fri 10-12pm EBU3B B260A/B250A

- **Homework TA:** Natalie Larson
  - Office hours Wed 3:30-5:30pm in EBU3B B260A
Prereqs

- CSE120
  - I will approve enrollment for students currently taking it,
  - But, several parts of the course will be especially challenging
    » You are responsible for doing the extra reading on your own

- Programming experience
  - We will be assigning programming projects in C/C++
  - This course will not teach you C. The TAs will help, but you need to learn it on your own if you don’t already know it.
Expected Outcomes

- This course will teach you the fundamentals of computer networks:
  - Layering, signaling, framing, MAC, switching, routing, naming, Internetworking, congestion control, router design, etc.
- This course will not teach you signals and coding
  - Take an EE course to learn about modulation, encoding, etc. on different hardware technologies
- Similarly, we will not cover Internet apps/services
  - CSE124 covers application layer protocols, Web, etc.
  - You will be able to pick this up on your own with Google
CSE 123 Class Overview

- Course material taught through class lectures, textbook readings, and discussion sections
- Course assignments are:
  - Homework questions (based on lecture)
  - Two substantial programming projects
- Discussion sections are a forum for asking questions:
  - Lecture material and homework
  - Additional networking topics
- Discussion board (Piazza.com):
  - The place to ask questions about lecture, hw, projects, etc.
Textbook

Homeworks

- There will be 4 homeworks throughout the quarter
  - Reinforce lecture material…no better practice

- Collaboration vs. cheating
  - You *should* discuss homework problems with others
    - You can learn a lot from each other
  - But there is a distinction between collaboration and cheating
  - Rule of thumb: Discuss together in library, walk home, and write up answers independently
  - Cheating is copying from other student’s homeworks or solution sets, searching for answers on the Web, etc.
  - Suspicious homeworks will be flagged for review
Projects

- There will be two programming projects
  - You will have four weeks to complete each of them
  - The first will be assigned NEXT WEDNESDAY

- The projects must be completed in C/C++
  - We will prove skeleton code for you to use
  - Your job is to fill in the interesting/hard parts
  - The TAs will be available to help with coding

- The projects are INDIVIDUAL assignments
  - All code must be your own
  - OK to discuss design ideas, NOT OK to share/look at code
You are welcome to use any Linux machine in the labs in the basement of the CSE/EBU3B building
- Linux running on Intel machines

You can also use your home machine
- The project source will work on Windows/OS X (with caveats)
- Graders will test on ieng6 machines
- Be sure to test your projects there as well
Exams

- **Midterm**
  - Monday, November 4th
  - Covers first half of class

- **Final**
  - Wednesday, December 11th
  - Covers second half of class + selected material from first part
    » I will be explicit about the material covered

- **No makeup exams**
  - Unless dire circumstances (we all want to start vacation early)

- **Closed book with crib sheet**
  - You can bring one double-sided 8.5x11” page of notes to each exam to assist you in answering the questions
  - Not a substitute for thinking
Grading

- Homeworks: 20%
  - Think of these collectively as a take-home midterm

- Midterm: 15%

- Final: 25%

- Projects: 40%
  - Each project is 20% of your final grade
How *Not* To Pass CSE 123

- Do not come to lecture
  - It’s nice out, class is early, the slides are online, and the material is in the book anyway
  - Lecture material is the basis for exams and directly relates to the projects
  - Besides, the professor thinks he’s funny

- Do not do the homework
  - It’s only 20% of the grade
  - Excellent practice for the exams, and some homework problems are exercises for helping with the project
  - 20% is actually a significant fraction of your grade (difference between an A and a C)
How *Not* To Pass (2)

- Do not ask questions in lecture, office hours, or email
  - Professor is scary, I don’t want to embarrass myself
  - Asking questions is the best way to clarify lecture material at the time it is being presented
  - Office hours and email will help with homeworks, projects

- Wait until the last couple of days to start a project
  - We’ll have to do the crunch anyways, why do it early?
  - The projects cannot be done in the last couple of days
  - Repeat: The projects cannot be done in the last couple of days
Class Web Page

http://www.cs.ucsd.edu/classes/fa13/cse123-a/

- Serves many roles...
  - Course syllabus and schedule (updated as quarter progresses)
    » Lecture slides
  - Announcements
  - Homework handouts
  - Project information
Questions

- Before we start the material, any questions about the class structure, contents, etc.?
Protocols & Layering
- Manage complexity by decomposing the tasks
- Standardizing syntax and semantics to support interoperability

Naming
- Agreeing on how to describe a host, application, network, etc.

Switching & Routing
- Deciding how to get from here to there
- Forwarding messages across multiple physical components

Resource Allocation
- Figuring out how to share finite bandwidth, memory, etc.
For Next Class…

- Browse the course web
  - http://www.cs.ucsd.edu/classes/sp13/cse123-a/

- Read Chapter 1 and start Chapter 2 (up to 2.2)

- Drop now or plan to stick it out!
  - Come see me if you are not yet officially enrolled

- Have a great weekend!