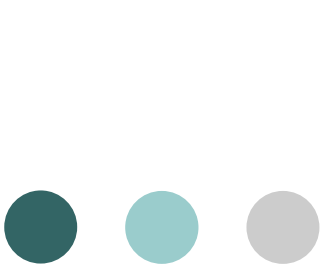

CS519: Computer Networks

Lecture 0: Jan 24,2005

Course Description

Welcome to CS519: Computer Networking

CS419

- Instructor: Prof. Paul Francis
- TAs:
  - Manpreet Singh
  - Nate Nystrom
- Each of us will have 2 hours of office hours each week

About myself

CS419

- Nearly 20 years networking experience
  - Mostly industry research labs
  - But a few years in startups
- A lot of my research has had commercial implementation
  - Especially NAT (Network Address Translation)
  - Also: shortcut routing, shared multicast trees, scaling though multiple addresses . . .

My goals for you

CS419

- To have a deep understanding for the basic architectural principles of computer networking
  - Esp. Network and Transport
- To understand good network and networked application design: simplicity, scalability, performance, and the end-to-end principle
- To understand specifically how the Internet works today, and where it is going in the near future

Non-goals

CS419

- To teach you all the buzzwords
- To teach you every protocol out there
- To teach you something about every layer of the stack
  - I mainly focus on network and transport
- Why not??? It'll all go in one ear and out the other…

How will these goals be achieved?

CS419

- Of course lectures and homework
- Implementation projects:
  - Build IP and UDP protocols (C or C++ only!)
    - You may choose your own project in lieu of this
  - Simulations (OPNET)
  - Network measurements (Ethereal, Ping, Traceroute)

Class-defined Projects

CS419

- You must complete the class-defined projects alone
  - Which means…write the code yourself
    - And later describe it during a code walk-through
  - *But you may consult with classmates*
- Projects can run on CSUG machines or on Linux machines

Self-defined project

CS419

- At any time during the semester you may propose your own project in lieu of the remaining class-defined projects
  - Goals and deliverables must be clearly defined
- Self-defined projects may be done by teams
- Self-defined projects may be done for combined MEng (CS790) and CS519 credit

Homework and tests

CS419

- Small weekly homework assignments
  - You may discuss these among yourselves, but again you must do your own homework
- Homework answers to be discussed in class
  - Grading will be simple √ (check), √+, √–
- Two exams (in-class)
  - One midterm to be held during class hours, and one final during finals week

Homework and tests

CS419

- Tests will be open-note open-book
  - But only the Davie-Peterson text
- Tests will be based on reading assignments and homework
  - But much of the homework will go beyond the contents of the book
- If you do the homework, and show up for class discussions of the homework, you should have no trouble with the tests

Grading of projects

CS419

- Different projects will be graded differently
- Class-defined project will be tested mainly via packets sent and received by our test platform
- Plus a code walkthrough to validate that you really wrote the code
- Self-defined projects will probably require demos
- **But I reserve the right to request a demo and discussion and to base your grade on that!!!**

Grade formula

CS419

- The grade will be weighted more heavily by the tests and the projects, less so by the homework
  - But, the homework is important because it will show up in the tests
- I won't decide until the end of the course the exact weightings
- I also reserve the right to raise or lower your grade outside the scope of the weighting
  - Being vocal is class is a good way to raise your grade…

Late assignments policy

CS419

- Homework must be turned in to CMS by the start of the class where it will be discussed
- Other assignments, you lose 3 points (out of 100) for each day it is late

Other administrivia

CS419

- Class announcements will be made via the CMS class mailing list
  - There will also be a separate mailing list for class discussions: TBA
- Class will be administered by CMS
  - Homework and project hand-ins

Course Text

CS419

- *Computer Networks: A Systems Approach*
  - Larry Peterson and Bruce Davie
- Authors represent a nice combination of education (Peterson, Princeton) and industry (Davie, Cisco)
- We'll follow this text quite closely