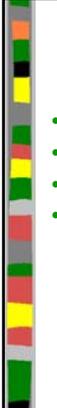




CS533

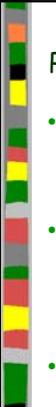
Modeling and Performance Evaluation of Network and Computer Systems

Mark Claypool

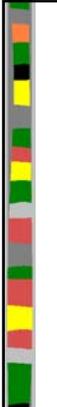
Topics

- Background
- Admin Stuff
- Motivation
- Performance Evaluation!
 - (Introduction)

Professor Background (Who am I?)

- Dr. Mark Claypool (professor, "Mark")
 - Systems
 - CS502 Operating Systems
 - CS529 Multimedia Networking
- Research interests
 - Networks (QoS, congestion control...)
 - Multimedia (Repair, Perceived quality...)
 - Network games
 - Performance
- Research groups PEDS and CC

Syllabus Stuff

- <http://www.cs.wpi.edu/~claypool/courses/533-S04/>
- Office hours:
 - TBA (about 3 per week each)
 - See Web page
- Email:
 - claypool at cs.wpi.edu
 - cs533-ta at cs.wpi.edu
 - cs533-all at cs.wpi.edu




Text Books

- Required
 - Raj Jain. [The Art of Computer Systems Performance Analysis: Techniques for Experimental Design, Measurement, Simulation, and Modeling](#), John Wiley and Sons, Inc., New York, NY, 1991.
- Other
 - David J. Lilja. [Measuring Computer Performance: A Practitioner's Guide](#), Cambridge University Press, New York, NY, 2000.
 - Douglas C. Montgomery. [Design and Analysis of Experiments](#), 5th Edition, Wiley Text Books, June 2000.




Topics

- Measurement techniques
- Monitoring tools
- Statistical analysis
- Simulation
- Analytic models
- Queuing theory
- Benchmarks
- Performance evaluation problems



Course Structure

- Prerequisites
 - Analysis of Computations and Systems (CS504, recommended)
 - Analysis of Probabilistic Signals and Systems (EE502, recommended)
 - Interest in performance evaluation
 - No networking experience required
- Grading
 - Exams (50%)
 - Projects (50%)



Exams

- 2 exams
- 50% of grade
- Non-cumulative
- Closed-note
- Closed-paper
- Closed-friend
- One-page "crib-sheet" (handwritten)



Projects

- About 4 projects
- Individual
- Apply concepts taught in class
- Performance evaluation related
 - Provide insight not obvious before project
 - Most are real problems



Slides

- On the Web
- PPT and PDF
- Caution! Don't rely upon the slides alone!
Use them as supplementary material
 - (come to class)
- See timeline, too



Why This Class?

- WPI CS requirements
 - (Course in Systems core area)
- Performance is the bottom line
 - Yes, the first line is just getting it to work, but that is intro CS
 - Better at school/job, if you do your own perf eval or read about others
- You cannot do experiments without performance evaluation
 - Experiments are science!
- Fun!

