CSE123
Computer Networks

George C. Polyzos

gpolyzos@eng.ucsd.edu
http://cseweb.ucsd.edu/~polyzos/

Department of Computer Science and Engineering
University of California, San Diego
Outline for today’s class

- Before the real 1st Lecture
  - Style and expected outcomes
  - Structure of the course
  - Policies and procedures

- Lecture 1
  - A brief overview of Computer Networking
  - High-level concepts
  - An end-to-end example
Questions…

- What is a computer network?

- How is a computer network similar to and different from other types of networks?
  - Telephone network
  - Roads network
  - ...

- How to build a scalable network that will support different applications?

- What is computer network architecture?
Instructor: Prof. George C. Polyzos

- gpolyzos@eng.ucsd.edu
- http://cseweb.ucsd.edu/~polyzos/
- Office: CSE 3132
- Tel.: 858 534 8615

Lectures: MWF 9:00-9:50 (CSB 002)

Office Hours (in CSE 3132): MW 10:05-10:55
About me…

- Born in Athens, Greece
- school: all over Greece
  - & 2 years in Brussels, Belgium

- Diploma in Electrical Engineering (1982)
  - National Technical University, Athens, Greece
  - 5 year degree, … punch cards… FORTRAN, wrote 8080 machine lang. simulator
    - Thesis: “A New Multiple Access Scheme for Local Area Networks”

- M.A.Sc.: Dept. of EE, Communications Group, U. of Toronto

- Ph.D.: Dept. of Computer Science, U. of Toronto
  - Ph.D. Dissertation: “A Queueing Theoretic Approach to the Delay Analysis for a Class of Conflict Resolution Algorithms”

- 1988-2000: UCSD/CSE: Asst. to Full Prof.
- 1999-present: Athens University of Economics and Business
  - Professor of Computer Science
- 2012-2013: Visiting Professor, UCSD/CSE
My Research Interests

- **(Future)** Internet Architecture and Protocols
- **Wireless** Packet Networks and **Mobile** Communications
- Mobile **Multimedia** Communications and Computing
- Mobile Communications and Internet **Security & Privacy**
- **Internet of Things** & Machine-to-Machine Communications
- **Performance Evaluation**
  of Computer & Communications Systems

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CSE 123 – Computer Networks

- ... will teach you the **fundamentals** of computer networks
  - layering, signaling, framing, medium access control
  - switching, routing, naming, Internetworking
  - flow & congestion control, etc.

- will not teach you much about signals and coding
  - take an EE course to learn about modulation, encoding, etc.
  - on different technologies...
  - PHY layer

- will not cover much Internet applications/services
  - CSE124 covers application layer protocols, Web, etc.
  - you can also pick up much of this on your own
Books

- **Textbook**
    - Chapters 1-6 of the text will be covered
    - Roughly: Physical to Transport layers

- **Other Texts**

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Prerequisites

- CSE120: Operating Systems
- Programming experience
  - C
- the programming project should be done in 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
About the Project

- significant component of the course.
  - semi-independent, TA run
  - programming in C
  - use of the sockets interface etc.
  - develop anywhere, demonstrate/graded on machines in the lab

- relies on
  - understanding of operating systems and
  - the ability to work with (OS) signals and processes

- you are expected to:
  - work collaboratively **in groups of two**
  - have individual responsibilities
    - that you will decide and will have to document,
    - demonstrate deep understanding of the full project

- more at the tutorial
Teaching Assistants

- Usha Subburaj (usubbura@eng.ucsd.edu)
- Boxiang Pan (bopan@ucsd.edu)

- will run the Discussion/Tutorial section
  - M 3:00-3:50 PM (CENTR 109)
    - Starting TODAY (M 04/01), but I will give a lecture instead!
  - will cover different topics/sections of the course
    - ~3-4 sessions on the project
    - remainder:
      - problem sets
      - example problems/questions
      - preparation/review for midterm and final

- TA Office Hours: TBA
Labs

- we will use the uAPE lab
  - in the basement of the CSE/EBU3B building
- Linux running on Intel machines
- you can also use your home machine
- ... but .... we will test on the lab machines
- Be sure to test your projects there as well!
Grading

- Homework and/or quizzes: 10%
- Midterm: 20%
  - during LE or DI
- Project: 30%
- Final: 40%

Please no requests for
- makeup exams
- extensions of due dates
- etc.

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Rules

- **Regrades should be the exception!**
  - Only significant grading errors on our part…
  - We reserve the right to completely regrade your assignments
  - All regrades go to TAs first

- **No Cheating!**
  - Cheating means not doing the assignment yourself
  - OK to talk with other students about assignments outside of class
  - No email (/SMS/…) about homework or project
    - except for the project, only between the two members of the same group…
    - … and questions to TAs, instructor
  - No copying, no Google for ready answers, etc.
  - If you’re unsure, then ask.
What **NOT** to Do…

- **Not** ask questions in lecture, tutorial, office hours…
  - .... asking questions is the best way to clarify lecture material at the time it is being presented
  - Tutorial, TA office hours and email will help with homework, project…

- Wait until the last couple of days to start the project…
  - the project cannot be done in the last couple of days…
  - … or weeks…
Learning…

- through class lectures
  - additional networking topics…
- textbook
- discussion sections / tutorials
  - a forum for asking questions
- homework (based on lectures and reading)
- the project!

- Ted / Blackboard ([http://ted.ucsd.edu](http://ted.ucsd.edu))
  - the tool to email the teaching team…
  - to ask questions about hw, project, etc.
  - to read answers to questions of others that may be of general interest/value