CS 3251 Fall 2010

Computer Networks I

"You're caught up in the Internet
You think it's such a great asset
But you're wrong, wrong, wrong.
All that fiber-optic gear
Still cannot take away the fear
Like an Island song."
----- "Holiday" by Jimmy Buffet

Instructor:	Prof. Mostafa Ammar (my_last_name 'at' cc.gatech.edu)
Location:	Klaus 3344
Meeting Times:	TR 9:35am - 10:55am
Credits:	3
Prerequisites:	CS 2200 (minimum grade of C)
Office Hour:	Tuesdays 2-3pm, or by appointment.
TA and Office Hours:	TBA

Overview

Communications networks are fundamental to our everyday lives. Whether for enabling global scale commerce or connecting long lost friends, these systems have created an unparalleled age of information. Accordingly, knowledge of such systems is critical for all scientists and engineers. This course provides an introduction to the principles of design and operation of communication networks in general and the Internet in particular. The course will consider topics such as networked applications and protocols reliable transmission and congestion control at the transport layer, routing at the network layer, and multiple access protocols at the link layer. The latter portion of the course will include wireless and mobile networks, queuing fundamentals, security, and network management.

A detailed list of lectures, readings, assignments, due dates (subject to change as the semester evolves) is available on the course schedule.

Textbook and Readings

- The following textbook is required for this class.

  Computer Networking: A Top-Down Approach Featuring the Internet 5th Edition, Jim Kurose and Keith Ross, Addison Wesley (at bookstore). The syllabus contains references to reading in the text, marked as *KR*.

The text will be supplemented with handouts and web pointers.

- You may also find the following open-source on-line text useful:

  Computer Networking : Principles, Protocols and Practice by Olivier Bonaventure

- For Sockets Programming the following additional on-line reference will be useful:

  "Beej's Guide to Network Programming"

- Another good reference for Sockets PRogramming is "TCP/IP Sockets in C: Practical Guide for Programmers" by Michael J. Donahoo and Kenneth L. Calvert

Grading

Students will be evaluated based on the following breakdown:

- 20% Homework
- 25% Projects
- 25% Midterm
- 30% Final

Important Notes About Grading

- I can only give out a grade of I for non-academic reasons.
- If you end up doing poorly in the class please don't ask for "extra work" to raise your grade. This would not be fair to other students.
- For those registered as P/F. A Pass requires that you earn a"C" or better *and* that you submit all work items and take the exam.

Midterm and Exam

The course will include one midterm and one final exam. Students will be responsible for material covered both in the text AND lectures. Attendance is therefore recommended as not all class discussions will be covered in the text.

The Mid-Term is scheduled in class on October 12, 2010. The final will be scheduled in the Final Exam period.

Homework and Projects

This course will consist of four homework and two programming projects.

Material will be due at 11:59pm of the specified date and should be submitted using t-square .

Projects must be written in the C programming running on unix/linux.

See the lateness policy below.

Class Participation

To do well in this course, students must take active and regular roles in discussion and demonstrate comprehension of the reading and lecture themes. Students are required to do the assigned reading **before** class.

Lateness Policy

Assignments and projects should be handed in on time. There will be a 20% late penalty for material handed in 1-24 hours late and a 50% penalty for material submitted 24-48 hours late. Material that is submitted more than 48 hours late will not be accepted and will receive a ZERO grade.

Academic Integrity Policy

The HWs and programming projects are to be done *individually* . You are strongly urged to familiarize yourselves with the GT Student Honor Code rules. Specifically, the following is not allowed:

- Copying, with or without modification, someone else's work when this work is not meant to be publicly accessible (e.g., a classmate's program or solution).
- Submission of material that is wholly or substantially identical to that created or published by another person or persons, without adequate credit notations indicating authorship (plagiarism).

You are encouraged to discuss course topics and assignments with others as long as this does not involve copying of code or solutions. Any public material that you use (open-source software, help from a text, material you find on the web, material from a paper, substantial help from a friend, etc...) should be acknowledged explicitly in anything you submit to us.

If you have any doubt about whether something is legal or not please do check with the class Instructor.