Computer Networks

CAS CS-555 – Fall 2001

http://www.cs.bu.edu/fac/byers/cs555.html

TR 9:30 - 11:00 AM, SCI 115

	Instructor: Prof. John Byers	**Teaching Fellow: Anukool Lakhina**
Office	MCS 280, Phone: 353-8925	TBA
Email	byers@cs.bu.edu	anukool@cs.bu.edu
Web	www.cs.bu.edu/fac/byers	www.cs-people.bu.edu/anukool
Office Hours	Tu 11:00 - 12:30 & Thu 3:00 - 4:30	TBA
Lab Hours*	-	Wed 4:00 - 6:00

*: Lab hours will be held in the undergraduate programming lab when programming assignments have been assigned and are subject to change.

Course Overview: This course serves as an advanced introduction to computer networks and is geared toward seniors and beginning graduate students. The course will investigate the design of computer networks and network protocols, from both a conceptual and engineering design standpoint. The primary focus of the course will be on the *software* used behind the scenes to build scalable, general-purpose networks.

Prerequisites: Protocols underlying networked communications are intricate and can be best understood by those with a broad background in both the systems-oriented and theoretical aspects of computer science. In particular, this course will assume intimate familiarity with CS 350 (fundamentals of computing systems) and MA 293 (basic discrete math and elementary probability theory). Also, students are expected to have taken CS 330 (algorithms) or equivalent. Students without the prerequisites will not be allowed to enroll in the course.

Textbooks: The required text is Larry Peterson and Bruce Davie, *Computer Networks: A Systems Approach*, Morgan Kaufmann, 1999, available at the B.U. bookstore and at any online bookseller. Course materials will refer to the new second edition (blue cover) – please do not purchase the first edition (brown cover) used in years past. Another useful text which covers much of the material from a broader perspective is S. Keshav, *An Engineering Approach to Computer Networking*, Addison-Wesley, 1997. A small amount of supplemental reading will be assigned and distributed later in the course.

Workload: Be forewarned – the workload in this course will be heavy. To master the conceptual material covered in lecture, there will be written homework assignments due approximately every other week in class (likely due on alternating Tuesdays). In addition, there will be two substantial programming assignments (written in a language of your choice), each of which is likely to amount to a thousand lines of code. If you are worried that your skills in writing and debugging large programs are weak, this course may not be for you. (On the other hand, this course can help you greatly improve those skills).

Exams: There will be a ninety minute in-class midterm held during the middle of the semester, likely Tuesday, October 30. The final will be held during the normal final exam slot for courses in our time slot: Day 1, Friday, December 14 from 12:30 to 2:30 PM. Please plan your work and travel plans at the end of the semester accordingly.

Grading: The course grade will break down as follows: 25% written assignments, 25% programming projects, 20% midterm, 30% final. The mean grade last time I taught this course was "B".

Topics: We will no doubt drift from any formalized plan, but a rough schedule of where we are headed is provided in the pages that follow. A more detailed and continually updated schedule will be maintained on the course homepage.

Handouts: Handouts will be announced in class and posted on the course webpage, but it will be your responsibility to print them out.

Late Policy: I will post solutions to written homework assignments immediately after class on the due date. Therefore, late assignments will not be accepted after their in-class due date. Programming assignments will be accepted up to 48 hours after the submission deadline with a 10% deduction. In the event of serious illness documented by a doctor's note, makeup examinations will be given orally. Incompletes for the course will not be granted.

Academic Conduct: Academic standards and the code of academic conduct are taken very seriously at our university. Please take the time to review the CAS Academic Conduct Code if you are unfamiliar with its contents. The work that you submit must be your own original work – while it is acceptable to collaborate on written homework assignments, your writeups must be generated independently. For programming assignments, it is not acceptable to share code with your peers (although at my discretion, I may post some helpful routines on the website). Programming assignments will be tested for originality with an automated software tool.