Computer Networks
CAS CS 455/655 – Fall 2010
www.cs.bu.edu/fac/byers/cs455.html
455/655 Lectures: TR 12:30 - 2 PM, PSY B51
655 Network Seminars: TBA, times will vary

<table>
<thead>
<tr>
<th>Instructor</th>
<th>Prof. John Byers</th>
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<tr>
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<tr>
<td>Office Hours</td>
<td>Mon 10 - 11:30 &amp; Thurs 2:30 - 4:00</td>
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**Course Overview:** CS 455 serves as an advanced introduction to computer networks geared toward seniors majoring in Computer Science. CS 655 serves as an advanced introduction to computer networks suitable for graduate students who have not taken an advanced undergraduate course. Students in both classes will attend the same lectures and will complete the same written assignments, programming assignments and exams. In addition, students in CS 655 will attend and participate in a graduate networking seminar (roughly 6-8 meetings per semester) and will write a survey paper in the second half of the semester. The main focus of the course will be an investigation the design of computer networks and network protocols, from both a conceptual and design standpoint. We will mostly focus 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 familiarity with CS 350 (fundamentals of computing systems) and basic discrete math and elementary probability theory. Also, students are expected to have CS 330 (algorithms) as a co-requisite.


**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 (typically 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 these essential skills.
Teaching Fellow: In this offering of CS 455/655, we unfortunately do not have a teaching fellow, so I will try my best to keep an up-to-date list of answers to frequently asked questions (FAQ) about assignments and exams on the website.

Exams: There will be a ninety minute in-class midterm held during the middle of the semester, likely on Thursday, October 21. The final will be held during the normal final exam slot for courses in our time slot: Day 4, Saturday December 18 from 9:00 to 11:00 AM. Please plan your work and travel plans at the end of the semester accordingly.

Topics in CS 455: A rough schedule of weekly lecture topics and corresponding readings is provided in the course overview that follows. A more detailed and continually updated schedule will be maintained on the course homepage.

Additional topics in CS 655: In the additional meeting for CS 655, students will be asked to attend talks presented at BU by networking researchers, read the corresponding research papers, and provide two concise talk summaries during the course of the semester. Students enrolled in CS 455 are also welcome to participate. In the second half of the semester, 655 students will write a short survey article on a networking research topic of their choice. Some suggestions for appropriate topics will be provided in mid-October.

Grading: Students enrolled in CS 455 will be graded on a different scale than those enrolled in CS 655. For CS 455, the course grade will break down as follows: 25% written assignments, 25% programming projects, 20% midterm, 30% final. For CS 655, the course grade will break down as follows: 20% written assignments, 20% programming projects, 15% midterm, 25% final, 20% survey paper and participation in 655 meetings.

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 on the course website 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 20% deduction. In the event of serious illness documented by a doctor’s note, makeup examinations will be given orally.

Academic Conduct: Academic standards and the code of academic conduct are taken very seriously at our university. Please take the time to review the College of Arts and Sciences Academic Conduct Code at www.bu.edu/cas/students/undergrad-resources/code. The work that you submit must be your own original work – while it is acceptable to brainstorm together on the 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 course website). Programming assignments will be tested for originality with an automated software tool.