CS242 Networks
Randy Shull
Wellesley College

CS242 Course Information

1 Contact Information

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Phone: x3102
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Lectures: Monday and Thursday 8:30am – 9:40am
Office Hours: Tuesday Noon – 1:00pm
                                 Wednesday 10:00am – 11:30am
                                 Friday 1:30pm – 2:40pm
Web Site: http://cs.wellesley.edu/~CS242

2 Course Overview

Networking is among the most exciting and dynamic fields in computer science, and because of the Internet, it is also one of the most important. We will study computer networks using the Internet as our primary example. To manage complexity, and the Internet is a poster child for complexity, we, like computer scientists before us, will organize the hardware and software that implement network protocols into layers. Each layer relying on the services offered by the layer beneath it, until the entire stack bottoms out at the physical layer.

The course begins with an overview Internet and of the five layers (application, transport, network, link, and physical) used to implement it. This will take about a week, after which we will begin at the top of the protocol stack, the application layer, and work our way down treating the layers beneath our current one as black boxes and using the services they provide via abstract contracts much in the same way as you did in CS111. A detailed and up-to-date syllabus may be found on the course website http://cs.wellesley.edu/cs242.

We will spend two to three weeks on each level of the network protocol stack. Since each layer probably deserves (at the very least) its own course, our discussions will necessarily be abbreviated.
3 Course Resources

3.1 Web Pages
All handouts and various course-related links can be found on the CS242 home page at:

http://cs.wellesley.edu/~cs242

3.2 Textbook
There is one textbook in this course from which I will assign readings: Computer Networking: A Top-Down Approach Featuring the Internet, by James F. Kurose and Keith W. Ross and published by Addison Wesley. Copies are available in the bookstore. I have put several copies on reserve in the Science Center Library.
I will also hand out a few technical papers that cover some of the material.

3.3 Teaching Assistants
This year we are fortunate to have Jazlyn Akaka and Karina Chan as a teaching assistants for the course. Both will be holding drop-in hours each week. The schedules of the drop-in hours will be posted within the next few days.

3.4 Conference
Additionally, there is a course conference, CS-242-01-FA15, which will be used to make class announcements such as corrections to assignments and clarifications of material discussed in class. It is also a forum for you to post questions or comments. They will be answered by me or a classmate. This is also a good place to find people to form a study group.

4 Assigned Work

4.1 Problem Sets
There will be weekly problem sets during the semester. These will mostly be pencil and paper problems dealing with topics from the reading. **Start your assignments early!** This will give you time to think about the problems
and ask questions if you hit an impasse. Waiting until the last minute to begin an assignment is a recipe for disaster.

I will strive to have problem sets graded as soon as possible. At this time, detailed solutions will be distributed with the graded homework.

4.2 Exercise Sets

More often than not classes will end with a programming exercise illustrating the main topics of that day’s lecture. These exercises should be done in teams of two and will be relatively short. However, you will probably will not be able to finish them during class time. You and your partner should continue to work on each exercise set as soon as possible after class. The ground rules for this collaboration as well as that for assignments are given in the following section. Each team will turn in a single exercise set which will be due at the start of the next class period. Solutions to the previous class’s exercises will distributed at that time.

4.3 Collaboration Policy

I believe that collaboration fosters a healthy and enjoyable educational environment. For this reason, I encourage you to talk with other students about the course and to form study groups.

You are allowed on any assignment or exercise to form a two-person “team” with a partner. The two team members can (in fact, must; see below) work closely together on the assignment/exercises and turn in a single hard-copy of the assignment for the team. The grade received on such a submission will be given to both team members.

This is a rather unusual collaboration policy, and it is only allowed subject to the following ground rules:

- The work on group problems must be a true collaboration in which each member of the team will carry her own weight. It is not acceptable for two team members to split the group problems of an assignment between them and work on them independently. Instead, the two team members must actively work together on all parts of the assignment.

The fact that team members have to work together means that you need to carefully consider a potential partner’s schedule before forming a team. You cannot be a team if you cannot find large chunks of time to spend at a computer together!
• You are encouraged to work with different partners on different assignments. Rotating through partners is a good way to build community in the class and is helpful for avoiding situations where one individual feels pressured to continue working with another.

• You are not required to have a partner on any assignment, but you are encouraged to do so. Based on past experience, working with a partner can significantly decrease the amount of time you spend on an assignment, because you are more likely to avoid silly errors and blind alleys. On the other hand, certain individuals may take more time on an assignment than they would alone. In this case there are still benefits to working with a partner, but they may be outweighed by the time cost.

Unless otherwise instructed, teams are allowed to discuss the problem set with other teams and exchange ideas about how to solve them. However, there is a thin line between collaboration and plagiarizing the work of others. Therefore, I require that each (one-person or two-person) team must compose its own solution to each assignment. In particular, while you may discuss general strategies for approaching the assignments with other teams, each team is required to write up its own solutions separately.

In keeping with the standards of the scientific community, you must give credit where credit is due. If you make use of an idea that was developed by (or jointly with) others, please reference them appropriately in your work. E.g., if person X gets a key idea for solving a problem from person Y, person X’s solution should begin with a note that says “I worked with Y on this problem” and should say “The main idea (due to Y) is ...” in the appropriate places. It is unacceptable for students to work together but not to acknowledge each other in their write-ups.

When working on homework problems, it is perfectly reasonable to use materials from the textbooks and other materials handed out in class. It is also reasonable to consult public literature (books, articles, etc.) for hints, techniques, and even solutions. However, you must cite any sources that contribute to your solution. There is one extremely important exception to this policy: assignments and solutions from previous terms of CS242 are not considered to be part of the “public” literature. You must refrain from looking at any solutions to problem sets or exams from previous semesters of CS242. It is my policy that consulting solutions from previous semesters of CS242 constitutes a violation of the Honor Code.
4.4 Late Homework Policy

All problems set will be due on the advertised date and time. Since the material in this course depends so strongly on what has come before, turning in one problem set late will make it difficult to turn in the next problem set on time. In addition, solutions to problems sets will be discussed in lecture in order to build upon earlier work. For these reasons, late homework will not be accepted. If you have not completed the homework set, please turn in what you have finished by the due date.

In extenuating circumstances (e.g., sickness, personal crisis, family problems), you may request an extension without penalty. Such extensions are more likely to be granted if they are made before the due date.

5 Exams

There will be one in class midterm examinations this semester and a comprehensive final exam during the regular final examination period. All examinations are open book/open notes. However, you may not use a computer for either examination.

6 Grades

The course grade will be computed as shown below:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exercise sets (total)</td>
<td>20%</td>
</tr>
<tr>
<td>Problem sets (total)</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm examination</td>
<td>25%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
</tr>
<tr>
<td>Class participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

The default ranges for grades are expressed as a percentage of total points (excluding extra credit points):
I reserve the right to lower boundaries between grades, but I will not raise them. This means that I can grade on a curve, but only in your favor.

The above information is intended to tell you how I grade. It is not intended to encourage a preoccupation with point accumulation. You should focus on learning the material; the grade will take care of itself.

### 7 Finding Help

If you have any questions at all about the class (whether big or small, whether on problem sets lectures, reading, or whatever) please contact me. **That’s what I’m here for!**

The best time to see me is during my scheduled office hours (which are listed at the top of this handout). If these times are not convenient, we can set up an appointment at some other time. You can set up an appointment by talking with me in person, calling me on the phone, or sending me email. You can also ask questions by sending me email. I read my email on a regular basis, and will check it even more frequently in the few days before an assignment is due.

Our tutors, Jazlyn and Carina, will be holding regular drop-in hours throughout the semester. These will be announced during the first week of classes. Please do stop by and introduce yourself.

Don’t forget our the course conference. Here students may ask and answer questions among themselves concerning course material and assignments. You may discuss the homework in general terms, suggest where to go in the text or lecture notes to help someone get started, or you may help clarify an ambiguous question. However, please do not post your solutions either complete or partial. I will check the conference regularly to help with any unanswered questions.
If you are having trouble with the course, you can request a one-on-one tutor from the Pforzheimer Learning and Teaching Center (PLTC). This service is confidential and free of charge; please take advantage of it if you would like some extra help! Contact me or PLTC for more information about this service.

Finally, when looking for help, don’t overlook your fellow students — not only those who have taken the course in the past, but your classmates as well. Your classmates are a valuable resource; make good use of them!

8 Students With Special Needs

If you have any disabilities (including “hidden” ones, like learning disabilities), I encourage you to meet with me so that we can discuss accommodations that may be helpful to you.