

Course Information

Lecturer:	Professor Ronald L. Rivest 32-G692, 253-5880, rivest@mit.edu Office Hours by appointment
Teaching Assistants:	Dah-Yoh Lim 32-G630, 253-5971, dylim@mit.edu Office Hours: [Fridays, 3:30-5pm, 32-G5 lounge] Calvin Newport 32-G670, 253-1922, cnewport@mit.edu Office Hours: [Thursdays, 3:30-5pm, 32-G5 lounge]
Secretary:	Be Blackburn 32-G675A, 253-6098 be@theory.csail.mit.edu
Staff Email:	6.857-staff@theory.csail.mit.edu
TA Email:	6.857-tas@theory.csail.mit.edu

1 Prerequisites

The prerequisites for the course are 6.033 (*Computer System Engineering*) and 6.042J (*Mathematics for Computer Science*). It is recommended that students have had 6.046J (*Introduction to Algorithms*) and experience with modular arithmetic. You may take the course without having the pre-requisites, *if* you can convince the TAs that you have equivalent background.

2 Units

This is a 12-unit (3-0-9) H-level course intended primarily for seniors and first-year graduate students. It fits within the Computer Systems and Architecture Engineering Concentration. Graduate students will receive H-credit for this class.

3 Lectures

Lectures will be held in Room 1-190 on Mondays and Wednesday from 11:00AM to 12:30PM. A schedule of topics will be posted on the class web site; you can also get a sense of the topics to be covered by looking at the web sites from previous years. We will not provide lecture notes with the exception of a few lectures covering bleeding-edge material. Notes from previous years are on the class web site.

4 The class online

The course web site is online at:

<http://theory.csail.mit.edu/classes/6.857/>

Handouts, assignments, and announcements will be available online. The web site includes an online registration form (click: *Course Registration*). You **must** register for the course by completing this form no later than Friday, September 8th. Once you have registered, you will be automatically subscribed to the course mailing list:

`6.857-students [at] theory.csail.mit.edu`

We will use this list to make important class announcements. Notify the TAs if you wish to be removed from this list.

5 Textbook

There is no required textbook for this course. A list of recommended books will be made available. See the *References* page on the course web site for the relevant bibliographic information.

6 Groups

6.857 is a group-oriented course. Students will work in groups on both homeworks and the final project, although they do not need to work in the same group for both. Students should form their homework group in time to do the first homework assignment. The final project team should be determined by the date given below. Students who need help finding a group should contact the staff. To keep groups running smoothly, students should ensure that their fellow members are actively participating and should communicate regularly. Students who cannot resolve group problems should contact their TAs. If necessary, groups can be dissolved and reformed.

7 Homework

We will distribute approximately six problem sets on approximately a weekly basis. They will generally be handed out on Monday and be due on the following Monday. Homework submissions are to be sent to `6.857-submit@theory.csail.mit.edu` in either PostScript, PDF, or MS Word format. Homework templates will be available on the course web site. For homework involving non-trivial mathematics, students are strongly encouraged to use LaTeX to typeset their answers. Homework that is difficult for the graders to read will lose points.

Late homework will **not** be accepted. If in doubt, turn your problem set in early. Solutions will be distributed with corrected homework—hopefully within a week of being collected.

Generally, homework must be done in groups. You are to work on group problem sets and final projects in groups of three or four (preferably three). One problem set will be turned in by each group, and one grade will be given for each problem set. You **must** work in groups; homeworks turned in by individuals, pairs, pentuples, etc. will not be accepted. Be sure that *you* understand and approve the solutions turned in to *each* problem. Get your group organized as soon as you can, and email the composition of your group to the teaching staff.

We may occasionally assign homework that you must answer individually; see Section 11 for the policy governing these assignments.

8 Tests

We will have one in-class quiz Monday, November 13th. There is *no* final exam. The quiz will test your knowledge of material from lectures, problem sets, and readings.

9 Final project

Students will be responsible for a final project. You must work in a group of three or four people. The nature and the topic of the project is your choice, although it needs the approval of the teaching staff. See the *Term Projects* page on the course web site for a list of topics from previous years, sample proposals, and additional project-related resources. We will generally approve interesting topics about network and/or computer security.

It is advisable to get started early; we will gladly accept proposals before the deadline. Early submission gives us a chance to review and approve your project proposal, and to suggest references that you may have overlooked.

Important Dates:

- By Oct 2 - Students individually submit one-page project ideas via e-mail. These ideas will be posted on the course web site. After reviewing their classmates' project ideas, students will form three or four person teams. These teams need not be the same as homework groups.
- By Oct 16 - Turn in team composition and final project topics.
- By Nov 6 - A multi-page project draft and bibliography is due.
- Nov 14–22 - During this week, each project group will meet with a TA to review their progress.
- Dec 6,11,13 - Groups will present 7 minute talks on their projects in class.
- Dec 13 - Written projects are due.

10 Grading

Grades are:

45% for the problem sets

15% for quiz

40% for the final project

11 Collaboration and plagiarism

No collaboration is permitted the in-class quiz. All tests are open book and open notes. We encourage you, however, to prepare for the quiz by discussing course material with your classmates.

You may collaborate with individuals from other groups in problem sets, but your solutions must be written up only by individuals from your group. For individual homework assignments, you may discuss the problem set material with others. You must, however, write up your solutions independently.

If you do collaborate, acknowledge your collaborators in the write-up for each problem. If you obtain a solution with help (e.g., through library work or a friend), acknowledge your source and write up the solutions on your own. In most of your solutions, we will expect to see citations.

You may use any reference material to complete your homework assignments, including material on the Internet and material from previous years. However, we cannot emphasize enough that you must cite all your sources properly. You must remove any possibility of someone else's work from being misconstrued as yours. Plagiarism and other anti-intellectual behavior will be dealt with severely. (When we have found instances of plagiarism and/or unauthorized collaboration in the past, we have given reduced or failing grades for the class (not just for the particular assignment) and/or reported the incident to the Dean for Student Affairs.

12 Ethics

This is a course on Network and Computer Security. Although the course is primarily concerned with techniques that are designed to increase the security of networks and computer systems, a proper understanding of those systems requires that you be versed in their vulnerabilities and failings as well.

Nevertheless, unless you have explicit written authorization from the owner and operators of a computer network or system, you should never attempt to penetrate that system or adversely affect that system's operation. Such actions are a violation of MIT policy and, in some cases, violations of State and Federal law. Likewise, you should refrain from writing computer viruses, worms, self-reproducing code, or other kinds of potentially damaging software for this course unless you have explicit, written approval for the specific type of software that you wish to create. These kinds of programs are notoriously difficult to control and their release (intentional or otherwise) can result in substantial civil and criminal penalties.

We strongly recommend that you consult the *Athena Rules of Use* at <http://web.mit.edu/olh/Rules/>, and Section 13.2 of the MIT Policies and Procedures "Policy on the Use of Information Technology" at <http://web.mit.edu/policies/13.2.html>.

Finally, we recommend that you read and review the *ACM Code of Ethics and Professional Conduct* which can be found online at <http://www.acm.org/constitution/code.html>. (Or Google for "acm ethics".)