Course Information

This handout describes basic course information and policies. Most of the sections will be useful throughout the course. The main items to pay attention to **NOW** are:

1. Please make sure you are signed up through Stellar, and talk to the TAs if there is a problem.
2. Please note the dates of the quizzes and make sure to keep these dates free.
3. Please note the collaboration policy for homeworks.
4. Please note the grading policy, and in particular, the penalty for *missed* problems.

1 Staff

The lecturers for this course are Prof. Shafi Goldwasser, Prof. Piotr Indyk, and Prof. Ronitt Rubinfeld. Please see the stellar website for names and contact information for lecturers and teaching assistants.

The course website is at:
`https://stellar.mit.edu/S/course/6/fa13/6.046/`

The staff e-mail is: `6046-tas@mit.edu`

2 Registration for recitations

If you would like to switch the recitation assigned to you by the registrar, you can do so until Monday, September 9, on the Stellar website. After September 9, please contact Nathaniel Arce (codetaku@mit.edu). In the first week of class, requests for changes will generally be approved if space permits.

3 Prerequisites

This course is the header course for the MIT/EECS Engineering Concentration of Theory of Computation. You are expected, and strongly encouraged, to have taken:

- 6.006 *Introduction to Algorithms* **and**
- Either 6.042J/18.062J *Mathematics for Computer Science* or 18.310 *Principles of Applied Mathematics*

and received grades of C or better.

Petitions for waivers will be considered by the course staff. Students will be responsible for material covered in prerequisites.

4 Lectures & Recitations

Lectures will be held in room 26-100 from 11:00 A.M. to 12:30 P.M. on Tuesdays and Thursdays. You are responsible for material presented in lectures, including oral comments made by the lecturer.

Students must also attend a one-hour recitation session each week. You are responsible for material presented in recitation. Attendance in recitation has been well correlated in the past with exam performance. Recitations also give you a more personalized opportunity to ask questions and interact with the course staff. Your recitation instructor will assign your final grade.

Recitations will be taught by the teaching assistants on Fridays.

5 Problem sets

Six problem sets will be assigned during the semester. The course calendar, available from the course webpage, shows the tentative schedule of assignments and due dates. The actual due date will always be on the problem set itself. Homework must be turned in by 11:59 pm on the due date.

- Late homework will generally not be accepted. If there are extenuating circumstances, you should make *prior* arrangements with your recitation instructor. *An excuse from the Dean's Office will be required if prior arrangements have not been made.* In all cases, late homework must be submitted online on the course website.

- Each problem must be written up separately, since problems may be graded by separate graders. Mark the top of each sheet with the following: (1) your name, (2) the name of your recitation instructor, and the time your recitation section meets, (3) the question number, (4) the names of any people you worked with on the problem (see Section 8), or "Collaborators: none" if you solved the problem completely alone.

- Answers should be submitted online to the Stellar website in PDF format. Formatting your problem set in LaTeX will make it easier for us to read; however, any method of generating the PDF is acceptable (including scanning handwritten documents) as long as it is clearly legible.

- The problem sets includes exercises that should be solved but not handed in. These questions are intended to help you master the course material and will be useful in solving the assigned problems. Material covered in exercises will be tested on exams.

6 Guide to writing up homework

You should be as clear and precise as possible in your write-up of solutions. Understandability of your answer is as desirable as correctness, because communication of technical material is an important skill.

A simple, direct analysis is worth more points than a convoluted one, both because it is simpler and less prone to error and because it is easier to read and understand. Sloppy answers will receive fewer points, even if they are correct, so make sure that your handwriting and your thoughts are legible. If writing your problem set by hand, it is a good idea to copy over your solutions to hand in, which will make your work neater and give you a chance to do sanity checks and correct bugs. If typesetting, reviewing the problem set while typing it in often has this effect. In either case, going over your solution at least once before submitting it is strongly recommended.

You will often be called upon to "give an algorithm" to solve a certain problem. Your write-up should take the form of a short essay. A topic paragraph should summarize the problem you are solving and what your results are. The body of your essay should provide the following:

1. A description of the algorithm in English and, if helpful, pseudocode.

2. At least one worked example or diagram to show more precisely how your algorithm works.

3. A proof (or indication) of the correctness of the algorithm.

4. An analysis of the running time of the algorithm.

Remember, your goal is to communicate. Graders will be instructed to take off points for convoluted and obtuse descriptions.

7 Grading policy

The final grade will be based on six problem sets, one in-class quiz, one evening quiz, a final during final exam week, and participation during the weekly recitation sections. Quiz 1 will be in class on Tuesday, October 22, 11:00 A.M. to 12:30 P.M. in room 26-100. Quiz 2 will be held the evening of Thursday, November 14, time TBD.

The grading breakdown is as follows:

Problem sets	25%
In-class quiz	20%
Evening quiz	25%
Final exam	30%

Although the problem sets account for only 25% of your final grade, you are required to at least attempt them. The following table shows the impact of failing to attempt problems:

Questions skipped	Impact
0	None
1	One-hundredth of a letter grade
2	One-tenth of a letter grade
3	One-fifth of a letter grade
4	One-fourth of a letter grade
5	One-third of a letter grade
6	One-half of a letter grade
7	One letter grade
8	Two letter grades
9 or more	Fail

Please observe that this table is for *questions* skipped, not *problem sets*.

8 Collaboration policy

The goal of homework is to give you practice in mastering the course material. Consequently, you are encouraged to collaborate on problem sets. In fact, students who form study groups generally do better on exams than do students who work alone. If you do work in a study group, however, you owe it to yourself and your group to be prepared for your study group meeting. Specifically, you should spend at least 30–45 minutes trying to solve each problem beforehand. If your group is unable to solve a problem, talk to other groups or ask your recitation instructor.

You must write up each problem solution by yourself without assistance, however, even if you collaborate with others to solve the problem. You are asked on problem sets to identify your collaborators. If you did not work with anyone, you should write "Collaborators: none." If you obtain a solution through research (e.g., on the web), acknowledge your source, but write up the solution in your own words. **It is a violation of this policy to submit a problem solution that you cannot orally explain to a member of the course staff. No collaboration whatsoever is permitted on quizzes or exams.**

Plagiarism and other dishonest behavior cannot be tolerated in any academic environment that prides itself on individual accomplishment. If you have any questions about the collaboration policy, or if you feel that you may have violated the policy, please talk to one of the course staff. Although the course staff is obligated to deal with cheating appropriately, we are more understanding and lenient if we find out from the transgressor himself or herself rather than from a third party.

9 Textbook

The primary written reference for the course is the third edition of the textbook *Introduction to Algorithms* by Cormen, Leiserson, Rivest, and Stein. In previous semesters the course has used the first or second edition of this text. We will be using material and exercise numbering from the third edition, making earlier editions unsuitable as substitutes.

The textbook can be obtained from the MIT Coop, the MIT Press Bookstore, and at various other local and online bookstores.

10 Course website

The course website contains links to electronic copies of handouts, corrections made to the course materials, and special announcements. You should visit this site regularly to be aware of any changes in the course schedule, updates to your instructors' office hours, etc. You will be informed via the web page and/or email where and when the few handouts that are not available from the web page can be obtained.

In addition, you should use the Stellar website to submit problem sets and check on your grades.

11 Extra help

Based on the desires of the students, the teaching staff will offer regular office hours. Details will be discussed in recitation during the first week of class. You may attend the office hours of any TA (not just your own).

Further help may be obtained through tutoring services. The MIT Department of Electrical Engineering and Computer Science provides one-on-one peer assistance in many basic undergraduate Course VI classes. During the first nine weeks of the term, you may request a tutor who will meet with you for a few hours a week to aid in your understanding of course material. You and your tutor arrange the hours that you meet, for your mutual convenience. This is a free service. More information is available on the HKN web page:

`https://hkn.mit.edu/tutoring/index.php`

Tutoring is also available from the Tutorial Services Room (TSR) sponsored by the Office of Minority Education. The tutors are undergraduate and graduate students, and all tutoring sessions take place in the TSR (Room 12-124) or the nearby classrooms. For further information, go to

`http://web.mit.edu/tsr/www`

This course has great material, so HAVE FUN!