Course Information

Lecturers:	Prof. Ronald Rivest	NE43-324	x3-5880
	Prof. Mauricio Karchmer	2-376	x3-4989
		NE43-307	x3-7553
Teaching Assistants:	Parry Husbands		
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	`ponzio@theory.lcs.mit.edu`	NE43-371	x3-9681
	Ravi Sundaram		
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Secretary:	Be Hubbard		
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1 Prerequisites and "antirequisites"

The only official prerequisite for the course is 18.01. Students should be familiar with sequences and series, limits, and integration and differentiation of univariate functions.

Students who have taken 18.063 or 18.310 should not take this course. To learn probability, we recommend these students instead take 6.041, 18.440, 18.313, or 18.05. Students can substitute 18.063 for 6.042 in the EECS department M.Eng. and S.B. requirements.

2 Lectures and recitations

Lectures will be held Tuesdays and Thursdays from 2:30 to 4:00 in Room **4-270**. Recitations will be held once a week for an hour on Fridays. There will be four recitations, at 1:00 in 26-210, 2:00 in 26-210, 2:00 in 34-302, and 3:00 in 34-301. Based on the information you give us today, we will assign recitation sections. These assignments will be distributed in lecture Thursday.

3 Tutorials

All students must attend a one-hour tutorial every week on Monday; attendance will be taken. Each tutorial group will consist of approximately five students. Each TA will conduct two tutorials in parallel. Each tutorial group will be given one or two problems to solve at the beginning of the hour. The group is expected to work together as a team in the solving of the problems. The TA will then ask one member from each group to present the solutions to both the groups. Based on this presentation the TA will assign a grade to each group. If the presentation is not satisfactory the TA may ask the entire group to write up the solutions.

4 Handouts and course notebook

In order to keep your handouts organized, get a loose-leaf notebook for the course. All handouts will be on standard three-hole punched paper and will be numbered consecutively. Handouts will be available in a file cabinet outside room NE43-201.

Handouts will also be available in postscript form on Athena. Type `attach 6.042` at the Athena prompt and then `cd /mit/6.042` to get into the course directory. Once there, you can type `lpr -P⟨printer-name⟩ ⟨file-name⟩` to print the file of your choice. For example, to print this handout you would type `lpr -P⟨printer-name⟩ H01-Info.ps`.

5 Books

The textbook for the course is *Discrete Mathematics for Computer Scientists* by J.K. Truss, Addison-Wesley (1991). Readings will be assigned from Truss for the first part of the course. The later part of the course (probability) is not well covered by any existing textbook. The required text for this part of the course is a small inexpensive book, *Theory and Problems of Probability* by Seymour Lipschutz, Schaum's outline Series.

Another text, a small paperback entitled *The Nuts and Bolts of Proofs* by Cupillari is recommended for those who are interested in learning more about how and why proofs of mathematical statements work. If you find mathematical proofs difficult, you should buy this book.

All texts are available at The Coop.

6 Grading

Grades will be based on written problems ($\approx 20\%$) and performance in tutorials ($\approx 10\%$), two quizzes ($\approx 20\%$ each), and the final exam($\approx 30\%$). We will drop your lowest tutorial grade and your lowest problem set grade.

As in most subjects, the written problems are essential to learning the material. In addition $\approx 85\%$ is the cutoff for an A grade. This means that if you miss the tutorials then you will have to be perfect in the rest of the course to get an A. The quizzes will be held in the evening on March 15 and April 20 from 7:00–9:00 P.M.

7 Problem sets

Problem sets will be assigned on a weekly basis. They will usually be issued in lecture on Thursday to cover that week's lectures and recitation, and then due in recitation the following week. They will be graded and returned, along with printed solutions, in recitation the week after.

Please clearly mark your problem sets with

1. your name,
2. the date,
3. problem numbers, and
4. the name of your TA.

Try to be as clear and precise as possible in your written solutions. Understandability of the solution is as desirable as correctness. Sloppy answers will be at a disadvantage and will receive fewer points even if they are correct. Presentation is very important. Poorly written solutions will be penalized. Also, please do not use red ink to write up your homework.

Late homeworks will not be accepted.

8 Collaboration

You are encouraged to collaborate in solving the homeworks. Study groups provide an excellent means to master the material of the course. You must write up solutions on your own, however. You must neither copy solutions nor provide solutions to be copied. Your write-up of a problem solution must be done alone and without help. No collaboration will be allowed on exams. Plagiarism, cheating, and other antiintellectual behavior will be dealt with severely.

> *A great discovery solves a great problem but there is a grain of discovery in the solution of any problem. Your problem may be modest; but... if you solve it by your own means, you may experience the tension and enjoy the triumph of discovery.*
>
> George Polya