6.045J/18.400J: Automata, Computability and Complexity Prof. Nancy Lynch

Handout 1: General Information

February 2, 2005 *Vinod Vaikuntanathan*

Lectures, Recitations and Office Hours

Lectures are Monday and Wednesday, 11–12:30, in 37-212. Recitations will be held on Thursdays at 10:00am in 34-302, 1:00pm in 34-304, and 4:00pm in 34-304. The office hours of the TA are (tentatively) Mondays 4-5pm in 32G-630 and by appointment. See the calendar on the course website for exceptions to this schedule.

Prerequisites

We assume that you have taken 6.042, Mathematics for Computer Science. 6.045 is, at heart, a mathematics course, and we assume that you are reasonably facile with mathematical concepts. In particular, we assume that you are comfortable with formal mathematical proofs, and can write them up properly.

Course materials

The book for this class is *Introduction to the Theory of Computation* by Michael Sipser. This term, we will use the SECOND edition of the textbook, which will be available at Quantum Books on February 15, 2005. Prior to that time, copies of the page proofs for the first few chapters will be handed out in class. The textbook will be placed on reserve at Barker Library, as well as three other books that students in the course have found useful in the past:

- *Introduction to Languages and the Theory of Computing*, by John Martin
- *Automata and Complexity* by Dexter Kozen
- *Computers and intractability : a guide to the theory of NP-completeness*, by Michael Garey and David S. Johnson.

Extra copies of handouts and supplemental readings will be kept in the course drawer, which is located outside of the TA's office (32-G630).

Electronic Infrastructure

There are two course mailing lists. The first, `6.045-staff@mit.edu`, reaches only the course staff. The second, `6.045-students@mit.edu`, reaches all staff and students. Please feel free to contact the staff via the first list, and your fellow students via the second. We especially encourage you to use the list to find collaborators.

There is also a course web page, at

`http://theory.lcs.mit.edu/classes/6.045/spring05`

Electronic copies of handouts and homework sets will be available there as they are created.

Grading Policy

There will be (approximately) weekly homework assignments, three in-class quizzes, and a final exam. The final grade will be computed using the following weights:

- Homework: 30%
- Quizzes: 30%
- Final Exam: 30%
- Participation in class and recitation sections: 10%.

Homeworks

Homework will be due approximately every week, at the beginning of Wednesday's lecture. We feel it is very important that you turn in the homework assignments on time and we are unable to accept late homeworks. However, when computing your grade at the end of the course, we will drop your lowest homework score. Therefore you need not worry about getting a bad grade on a single assignment.

With regards to homework: full credit will be given for correct answers and proofs. We will also grant partial credit for partial solutions and solutions with minor flaws. We will also give a *small* amount of partial credit for answers which read in full, "I don't know". Likewise, proofs with gaps will receive partial credit, and the partial credit granted will increase if the gaps are explicitly noted. We will give *no* credit for wildly incorrect answers which are obviously only there in the hopes of getting partial credit. Please only write down answers in which you are confident. Wild guesses only waste our time. Making yourself believe a false proof is **bad for your brain**.

We require that all homework solutions be typed up. We will provide LaTeX shells for you to flesh out with your solutions, but you do not need to use them. Hand-drawn diagrams are permitted. If you are unfamiliar with LaTeX, we recommend taking one of the Athena mini-courses on LaTeX offered in February. (There are links on the course website to mini-course information as well as a useful LaTeX How-To document).

Collaboration Policy

We strongly encourage collaboration. We do not expect you to be able to solve every homework problem on your own. We *do*, however, expect you to write up your own solution to every problem even if the solution is the result of a collaborative effort. To repeat: each person *must* write up his/her solutions separately. Also, in your write-up please credit the people with whom you worked. If you consult any reference material other than the textbook, please note on your homework which sources you used for each problem.

Quizzes and Exams

There will be three quizzes and one final exam. The **three quizzes** will be held during class time on Wednesday: **February 23**, **March 30**, and **April 27**. Each quiz will cover a unit of the course; the final exam will be cumulative. There will be no homework due on Wednesdays in which a quiz is given. The final exam has yet to be scheduled.

Contact Information

- Lecturer: Prof. Nancy Lynch, 32-G668, x3-7225, `lynch@csail.mit.edu`
- TA: Vinod Vaikuntanathan, 32-G630, x3-5971, `vinodv@csail.mit.edu`
- Course Secretary: Joanne Hanley, 32-G672A, x3-6054, `joanne@csail.mit.edu`