

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering and Computer Science

6.002x – Circuits and Electronics
Spring 2004

Information

6.002x Web Site: mit.edu/6.002x

Lecturer: Gerald Jay Sussman, Room NE43-428, Phone 253-5874, gjs@mit.edu.

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Web site: The course web site at mit.edu/6.002x contains further information about the course, a current course calendar and announcements, online versions of course material, and the on-line homework submission system.

Lectures: One-hour lectures will be held on Mondays and Wednesdays at 11:00 AM in Room 4-153.

Recitations: One-hour recitations will be held on Fridays at 11:00 AM. There will be two sections, one in 56-162 and one in 56-180. Recitations will be assigned at the beginning of the semester.

Tutorials: There will be two-hour tutorials that meet on Thursdays. Tutorials will be assigned at the beginning of the semester.

Attendance at all classes is required.

Welcome to the case-based experimental version of 6.002. By participating in this experiment you will be registered for 6.002 and you will receive full credit for 6.002, **however you may not switch between this class and the usual 6.002 lectures and recitations.** Equivalent material will be presented, but in a different way and in a different order. **Homework, examinations and laboratory exercises in this class will not be interchangeable with the usual 6.002 work.**

How to approach this course: This course is an experiment in case-based learning. Our goal, in comparison with the standard 6.002, is to try to provide a better feel for real engineering systems. We want to give you an opportunity to learn from working with experienced engineers. We want you to learn how to participate effectively in an engineering design and problem-solving group.

We also want you to cultivate the ability to dig out information from reference material on your own, rather than waiting for everything to be spoon-fed. You'll notice is that there is a large amount of reading material included for this course: the course notes are very long, and there will be additional background information handed out for each case. Don't feel that you have to study all of this in detail—it's often enough to skim and return later to find what you need to solve a problem. If you are worried about being overwhelmed by the amount of reading material you are

presented with, keep in mind that your primary focus for studying should be on the basic 6.002 concepts as presented in lecture and practiced in the homework; and on the case material explored in tutorial.

Tutorials: The most important difference between 6.002x and the regular 6.002 is that 6.002x has small-group tutorials where you work closely with a tutor. The tutors are outstanding, experienced engineers from local industry. In the tutorials you will examine interesting cases of real problems that are intended to help you learn the fundamental material of electronic circuits. Each case will last two or three weeks. You will have different tutors for each case, but you will stay with the same tutorial group throughout the semester. We intend that your tutorial group should become a coherent community of scholars that sticks together and provides mutual assistance in the learning process. Attendance at the tutorials is absolutely required.

Text: The course notes, *Foundations of Analog and Digital Electronic Circuits* by Agarwal and Lang, are the same as for the standard version of 6.002. They may be purchased at the Cashier's Office in Room 10-180, and picked up at the EECS Instrument Room Desk in the Lab, Room 38-500.

Homework: Homework will generally be issued on Mondays. You will be using an online homework system based on the one used in 6.001 for submitting your answers. In will be will be one or two short problems that will be due on line during the week to prepare you for that week's classes, and a larger number of problems due the following week.

Each new case will be introduced with a packet of material given out in lecture. The tutor will give out additional material as needed in the tutorial sessions. The tutor may also assign work which must be prepared for the next tutorial session.

You are welcome and encouraged to discuss the homework among your colleagues. However, the final formulation and write up of your homework answers must be your own. Submitting homework copied from someone else is a breach of ethics, and violations of ethics will be referred to the Committee on Discipline. More importantly, homeworks are critical to learning the material and to doing well on the quizzes and final exam. Homework questions may also appear in the tests, and homework performance will be taken into account during grade assignment.

There will be no credit given for late homework.

Labs: There will be five or six laboratory sessions over the course of the semester. These will be scheduled on Friday afternoons.

Quizzes: There will be three quizzes, given in recitation. The first will be on Friday, March 5; the second quiz will be on Friday, April 9; the third quiz will be Friday, May 7.

Final Exam: There will be a three-hour final exam during the end-of-term exam week. Time and room assignment will be announced later.

Grading: We will assign grades based on your performance in all aspects of the course: participation in lectures and tutorials, homework, quizzes, and the final exam. A significant part of the grade, in particular, will be based on reports from your tutors on how effectively you've participated in the tutorial sessions. Labs are also absolutely required; failure to complete the labs in this subject will automatically result in a failing grade.