Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science

6.002 – Circuits & Electronics
Spring 2006

Information

Lecturer: Prof. J. H. Lang, Room 10-176, Extension 3-4687, lang@mit.edu.

Instructors: Prof. L. A. Kolodziejski, Room 36-287, Extension 3-6868, leskolo@mit.edu;
Prof. R. R. Parker, Room NW17-288, Extension 8-6662, parker@psfc.mit.edu.

TAs: Lance Bourque, lanceb@mit.edu;
Byungsub Kim, byungsub@mit.edu (Head TA);
Alexander Moore, awmoore@mit.edu;
William Sanchez, wasan79@mit.edu.

The TA offices are inside the Lab, Room 38-501.

Web Site: http://web.mit.edu/6.002

Prereqs: Both 8.02(2) and 18.03/6 are important prerequisites for taking 6.002. It is
difficult to focus on the concepts introduced in 6.002 without the physical and
mathematical foundations that these prerequisites provide. Therefore, if you have
not taken both 8.02(2) and 18.03/6, you will not be allowed to enroll in 6.002.

Lectures: One-hour lectures will be held on Tuesdays and Thursdays at 11:00 AM in Room
10-250.

Recitations: One-hour recitations are currently scheduled for Wednesdays and Fridays as
shown in the chart below. Recitation assignments will be posted at the 6.002
web site by the end of the day on Thursday 2/9. You should attend your as-
signed recitation throughout the entire term. If you must change your recitation
assignment, please inform your TA or the Head TA.

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<th>Room</th>
<th>Instructor</th>
<th>TA</th>
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<td>10 AM</td>
<td>36-153</td>
<td>Kolodziejski</td>
<td>Sanchez</td>
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<td>11 AM</td>
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If changes to the scheduling of recitations become necessary, they will be an-
nounced in advanced during lecture and recitation. These changes will also be
reflected in the recitation assignments posted at the 6.002 web site.

Tutorials: Tutorials will be held in the TA offices inside the Lab, Room 38-501, on Mondays
and Tuesdays, and perhaps Wednesdays, during those weeks in which there is no
lab in progress. Tutorial hours will be assigned and posted at the 6.002 web site
by the end of the day on Thursday 2/9. Tutorials canceled due to the President’s
Day and Patriot’s Day holidays will be rescheduled by your TA.

Text: The 6.002 text book, *Foundations of Analog and Digital Electronic Circuits*, by Agarwal and Lang, may be purchased at Quantum Books. There is also a small number of books on reserve at Barker Library.

Videos: Nine hour-long video tutorials are available for viewing on the web. Their address is http://web.mit.edu/6.002/www/spring01/videos, and there is a link to them at the 6.002 web site. They cover the following topics: nodal analysis; complex numbers; transistor amplifier analysis; small-signal analysis; sinusoidal steady-state analysis; resonance; operational amplifiers; bode plots; and linear circuit dynamics.

WebSim: Interactive circuit simulations are available at http://euryale.lcs.mit.edu/websim. There is a link to the simulations at the 6.002 web site.

Homework: Homework will be issued on Wednesdays in recitation and collected on the following Wednesdays in recitation. Corrected homework with solutions will be returned in tutorials the week after it is collected. You are welcome and encouraged to discuss the homework among your colleagues, but the final formulation and write up of your homework solutions must be your own. Submitting homework copied from someone else is a serious breach of ethics, and will be handled by the Committee on Discipline.

Late homework will not be accepted for grading. However, total homework grades will be based on the best nine out of eleven individual homework grades. Thus, with one exception, two homework assignments may be missed without a grading penalty. The one exception is Homework #11, which is mandatory. Homework #11 will be a two-week design assignment that will also serve as the pre-lab exercises for Lab #4.

Handouts: Extra handouts from lecture and recitation can generally be found at the 6.002 web site. Please ask the lecturer or the Head TA for a copy of those handouts that can not be put on the web.

Labs: Labs will be conducted during the weeks of 3/6, 3/20, 4/24 and 5/8. TAs and LAs will be available for help and lab check-off at least between 1:00 PM and 5:00 PM during those weeks in which a lab is in progress. Individual lab hours will be assigned and posted at the 6.002 web site by the end of the day on Thursday 2/9. Written work for each lab, which is to be completed in a lab notebook, will generally be due in recitation on the Wednesday following the week of the corresponding lab. You are welcome and encouraged to discuss the labs among your colleagues. However, the execution and write up of your lab must be done on your own. Skipping the lab and submitting work copied from someone else is a serious breach of ethics, and will be handled by the Committee on Discipline.

Failure to complete the labs in this subject will result in a grade of F.

Lab Kits: Lab kits will be most easily purchased on Monday and Tuesday, 2/13 and 2/14, from 2 PM to 4 PM in the Lab, Room 38-501. To do so, you must bring a completed purchase form, and payment of $25; payment by check is preferred, but
Cash will be accepted. The forms will be handed out in recitation on Wednesday 2/8. Once purchased, the lab kits may be picked up at the EECS Instrument Desk in the Lab, between 9 AM and 5 PM. To pick up a lab kit, you must also sign and hand in the EECS Safety Sheet attached to the Laboratory Information handout. The EECS Safety Sheet will also be handed out in recitation on Wednesday 2/8.

**Lab Books:** You must obtain a thin square-ruled notebook for recording and/or graphing measurements and observations made during in-lab exercises. Written pre-lab and post-lab exercises must also be completed in your lab notebook. Your lab notebook will generally be due for grading during recitation on the Wednesday following the lab week; it will be returned before the next lab.

**Quizzes:** One-hour closed-book quizzes will be given in recitation on Wednesday 3/1, Friday 4/7 and Friday 5/5. Obviously, the quizzes must be worked on your own, and any infractions will be handled by the Committee on the Discipline.

Graded quizzes will be returned in recitation. If you do not attend recitation on the day that your quiz is returned, then it is your responsibility to get your quiz from your recitation instructor. You will have two weeks from the day each quiz is returned in recitation to request a grading review, regardless of whether or not you attended recitation and received your quiz. (Note that the two-week period may be shortened for Quiz #3 depending upon the date of the final exam.) If you wish to have your quiz grade reviewed, you must return your quiz to your recitation instructor, within the two week period, together with a written explanation of why you think a grading mistake was made. This is the only way in which a quiz grade will be reviewed.

**Final Exam:** A three-hour final exam will be given during the end-of-term exam week. Its timing and room assignment will be determined by the Registrar and announced later. You may bring one two-sided sheet of notes to the exam. Obviously, the final exam must be worked on your own, and any infractions will be handled by the Committee on Discipline.

**Grading:** Initial grading will be based approximately on the following assignment weighting: homework 10%, quizzes 20% each, and final exam 30%. This will be followed by considerable discussion among the entire teaching staff to factor in your performance on the labs, your participation in class and tutorials, and the general trend of your performance in 6.002 over the course of the term. This discussion can affect your letter grade, particularly if your initial grade is on a letter-grade boundary.

This subject has been designed so that lectures, recitations, tutorials, homework and labs are integral and essential parts of the learning process. Although there is no specific reward for participation, there is a clearly defined penalty for not participating. Students who consistently miss recitations, tutorials, homework and labs will not be included in the grading discussions.

Failure to complete any lab in this subject will result in a grade of F.