E84: Introduction to Electrical and Magnetic Circuits and Devices

Instructor: Professor Bob Schaffer
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Course Goals: In E84, students will learn the fundamental principles underlying electronic devices and their applications. Topics include: basic elements (resistors, capacitors and inductors), circuit laws/analysis (time-domain, AC analysis and a systems approach), electronic devices (diodes and op-amps), transistors (how they are made and used) and some advanced circuits. By applying the principles learned in this course, students will be able to not only analyze circuits they've never seen before, but also design new circuits.

Textbooks:
Required: Fundamentals of Electrical Engineering, 2nd Edition, Leonard S. Bobrow
Supplemental: Course notes by Dr. Tanenbaum – available in Engineering Office ($15)

Class website: http://odin.hmc.edu/~schaffer/classes/e84/

Class email: eng-84-l@hmc.edu

Classroom/Time: Beckman 126, M/W 9am-9:50am

Office Hours: While you can drop by my office anytime my door is open, I will make sure that my door is open and that E84 students have priority during the following days/times:

Monday 10am-11am; Tuesday 2pm-4pm

You should also feel free to email me to make an appointment. My schedule will be available online at http://odin.hmc.edu/~schaffer/Fall07Schedule.html and printed out and placed outside my office.

Class Grade:

Homework	15%
Labs	5%
Midterm 1	20%
Midterm 2	20%
Final	35%
Participation	5%

All parts are required. Meaning, for example, failure to do the labs will result in a failure of the class, even though the percentage of the overall grade is only 5%.

Homework: Weekly homework will be assigned on Wednesdays and it will be due **in class** one week later. Collaboration on homework is allowed, however, copying is not allowed. While it is useful at times to collaborate, you are learning how to apply principles and even though you may understand answers that your group came up with it is important to make sure that you can solve problems on your own. Homework solutions will be distributed in class on the Monday after the due date and graded homework will be returned the Wednesday after.

Late days: You may turn in homework late with the following penalties.

Thursday	10% off
Friday	25% off
Monday	50% off
After Monday	No Credit

You have **three free late days** that you can use at your discretion (however, **some assignments may NOT be turned in late**). The weekend counts as one day. So, if you use all three late days on one assignment, you may turn that homework in on Monday with no penalty. Any remaining free late days will be used first in all cases. Medical emergencies and other situations that may arise will be dealt with on an individual basis but, generally, will require documentation from the Dean of Students' office.

Labs: In addition to homework, there will be two or three labs this semester. These labs are meant to give you an opportunity to see and use the devices that you are learning about. Prelabs will be assigned the week before the labs are held and will need to be completed before your scheduled lab time. Lab time will be 2-3 hours in all and will include time for new material to be taught and for the assigned experiments to be performed. While there won't be formal write-ups, you should be able to verbally explain exactly what you did, what you learned and answer discussion questions. You and a partner of your choosing will sign up for lab times during the week before the lab is held. Lab times are still TBD.

Midterms/Final: There will be two in-class midterms and one in-class final in this course. For each exam, you will be responsible for all material covered up to that point.

Participation Grade: The 5% "participation" grade will incorporate your participation in class and labs. This doesn't mean that you are required to ask questions every class period. It simply means, that I expect you to be a part of the class. When questions are asked of the class, I hope for you to include yourself by attempting to answer questions. I should know who you are… if I don't, make sure I do. If you attend most classes, raise your hand to answer questions occasionally, submit an occasional status report to let me know how things are going and do your part in labs, you can expect to receive full credit here.

Status Reports: Occasionally, I'd like to hear from you so I can get some feedback on how the class is going and, in general, to see how you're doing with the material, pace, etc. These shouldn't be long – two-three sentences is sufficient, but feel free to write more. In these 'reports', you can ask questions, make suggestions, give constructive feedback regarding the lectures or the course in general, or you can just let me know how you're doing. I should receive at least two status reports from each of you this semester. Submission of these (not what you say) will count towards your participation grade.

Extra credit: There will be no opportunities for extra credit in this course.

General comments: In this course, I strive to work with you so you can learn the required material and that will prepare you for future courses in Electrical Engineering. While this is a two-unit course, there is a lot of material that needs to be covered to properly equip you to meet the needs of future courses. I will be relying on feedback from you to ensure that this class is a success. Comments regarding pace, workload, material or anything else on your mind will be graciously accepted. I look forward to a great semester and if my door is open, please feel free to stop on by to talk about anything that may be on your mind.