

ECE 2210

Electrical Engineering for Nonmajors Spring 2012 Class Syllabus

Instructors: Neil E. Cotter (Arn Stolp for the last few weeks)

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Office hours: My "office hours" are the problem sessions. Otherwise it's catch me if you can. To increase your chances, talk to me in class, or leave a phone message to say when you'd like to see me. I'm usually around until at least 2:00 p.m. M, W, & F. If I'm not in my office, check the lab.

Web Site: <http://www.ece.utah.edu/~ece2210/>

Required books and lab supplies:

Practical Electronics for Inventors, by Paul Scherz

Required class material packs (available from bookstore) & Ring binder

Lab notebook (bound or spiral)

Breadboard & Lab parts available for purchase at lab (or you may use my parts)

Prerequisites: MATH 2250 and PHYCS 2220

Introduction:

In case you haven't noticed, you're surrounded by electrical and electronic devices. Electrical motion, measurement and control are powerful and cheap, so they're used everywhere and are part of every technical career, including yours. Maybe you can find a job where other people make all the decisions concerning wiring, power distribution, electric motors, communications systems, instrumentation, and control; but do you *really want* that? Do you really *want* to be the clueless one?

ECE 2210 will introduce you to some of the basics of electrical engineering. This may not seem important now, but I think you will find these concepts very useful in your future classes and jobs. Besides, they'll help you pass the FE exam, and that should be of immediate concern.

I teach concepts and the use of those concepts to solve problems, not formulas and memorization. The hands-down easiest way get a good grade in this class is to learn those concepts.

This class consists of:

Lectures: W & F 9:40 -10:30 am in WEB L105

Lectures set the direction and tone of the class and cover more than the written material. You will be held accountable for everything discussed in the lectures, so your attendance is important.

Problem Sessions: M 9:40am in _____ & W 11:50am in _____

We cover a lot of material in this class and there is rarely enough lecture time to work examples or to answer your questions in detail. I will not cover new material in the problem session, so you can get by without staying, but I think you'll find it worth your while.

Textbook:

The text contains a great deal of practical, useful information beyond the theoretical material we cover in this class. It should prove to be a good reference. Unfortunately it contains many errors (See: www.eg.bucknell.edu/physics/ph235/ & download the errata pages). I ask that you let me know when you find errors so that I can share them.

Supplementary Packets:

I've supplemented the textbook with two packs of class material you will be able to buy in the bookstore. The first packet will be available Friday or early next week. The second packet will be available in March. These packets contain class notes, homework assignments, and lab instructions. Most of this material is also available on the web site; <http://www.ece.utah.edu/~ece2210/>.

Homework, homework, and more homework:

100 pts.

I will assign many problems for you to turn in, most of which will come from hand-outs, expect homework at every lecture. Homework will be your main study tool. As such, I'll give you all the answers so that you can check your work immediately. In fact, you'll have to self-correct your homework. If you can't get the answer, check the web site for corrections, study some more, come to the problem session, ask for help, or see the posted solutions. Sometimes I even post solutions *before* the homework is due. So, you might ask, "Why is it handed in and 'graded'?" Well, to answer a question with a question, "Would you even do it otherwise?"

Your homework should be neat and clear and show all your work. For most problems the grader will simply check to see that you've done it and that your paper shows the necessary work to get the answer. Only a few problems will be checked in greater detail. You may collaborate with others to learn how to do the homework, but will need to hand in your own work. Copying or allowing another student to copy your work is considered cheating..

You will probably learn more from doing the homework than any other part of this class. If you thoroughly understand the homework, you will know what the class is about, and the exams should give you no trouble.

Near the ECE office on the 3rd floor of MEB you'll find some lockers with slots in the doors. Drop your homework in the ECE 2210 HOMEWORK locker by 5:00 p.m. of the due date. I will accept *some* late homework for *some* credit. Bring it directly to me, and don't do it habitually. Solutions will be posted in a glass case, also near the ECE office. Graded homework, lab notebooks and exams will be returned to a file cabinet outside my office. Access may or may not be limited, your choice. If you want your material returned to the locked drawer simply remove your file and slip it under my door. Otherwise your material will be in the unlocked drawer and will not be secure.

Midterms:

300 pts.

You will take three 50 minute midterms throughout the semester. They will cover material up to the time of the test. My exams are designed to see if you learned concepts and problem solving strategies and whether you can work with them, sometimes in new and different ways. Don't try to memorize formulas or specific problems. Exams also cover what you learn in the labs. The first two exams are open book, open notes. The third midterm and the final may have a closed book section as well. Listen in class for details.

Final: Tuesday, 5/1/11, 3:30 - 5:30 pm + OR 8:00 - 10:00 am if you sign up 180 pts.

The final will be comprehensive with greater emphasis on the most recent material. There will be a review Monday 4/30 at _____ pm. Listen for details in class.

Labs: MEB 2265

120 pts.

Lab will be held every week, beginning Thursday, 1/13 and including the last week of class. Many of the subjects covered in lab aren't covered anywhere else in class, so make sure you pay attention and read the lab instructions. You will have to keep a laboratory notebook as a requirement of the lab. Your lab TA will collect and grade these notebooks.

Two labs will be replaced by a special lecture during lab time. The Monday lab section will be required to make up holiday time and attend a lecture as well as lab those times.

Labs are **not optional**. For each lab that you miss or fail (< 60% score), your final grade will suffer a **half letter drop** (5% of possible points). Be sure to make-up any labs you miss or fail.

Grades:

	<u>Pts</u>	<u>% of total</u>	<u>Grade</u>
Homework:	100	> 93	A
Labs:	120	90-93	A-
Midterms:	300	87-90	B+
Final:	<u>180</u>	83-87	B
Total:	700	80-83	B-
		77-80	C+
Failed lab:	-35	73-77	C
		70-73	C-
Cheating:	-700	67-70	D+
		63-67	D
		60-63	D-
		< 60	E

If you want any deviations from the normal requirements (say credit for labs, you've done before) you will need to see me before the work would normally be due and get an agreement *in writing*. You'll need to turn in your copy of the agreement with your final, so I'll remember to grade you properly.