

# ECE 2210

## Electrical Engineering for Nonmajors Fall 2021 Class Syllabus

Instructor: Arn Stolp

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E-mail: arnstolp@ece.utah.edu (I don't check my e-mail everyday, so let me know by some other method if you send me email that I need to read.) Subject should start with "ECE 2210"

Office hours: My "office hours" are the problem sessions. Otherwise it's catch me when you can. If I'm not in my office, check the lab. To increase your chances, talk to me in class to say when you'd like to see me. I teach another class at 2:00 p.m. T & Th. If I'm not in my office, check the labs.

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

Required books and lab supplies:

Practical Electronics for Inventors, 3<sup>rd</sup> or 4<sup>th</sup> Ed, by Paul Scherz & Simon Monk

Ring binder & weekly class material packs downloaded from canvas or website

Lab notebook (bound or spiral)

Breadboard & Lab parts available for purchase at lab (~\$20 on your U-card)

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:** T & H 9:10 -10:10 am in WEB L103

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:** T & H 10:10 -10:30 am in WEB L103 (directly after class)

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.

**Weekly Download Packets (in place of class handouts):**

I've supplemented the textbook with weekly packs of class material which you will download from the class web site (<http://www.ece.utah.edu/~ece2210/>), also linked in canvas. You should have received a class email with links. The packets are separated into class notes and homework assignments. Most of this material is also available individually on the web site. You will probably want to print much of this material. You can sign on to computers in the lab with the same user name and password you use (or can get) in the Engman computer lab (the one in WEB, floor L2). Then you can use the printers in the lab. The packets are designed to be printed on both sides of the pages. Please conserve paper and weight in your backpack.

**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 in my office window. 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 enough 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.

You will need to scan your homework, create a .pdf file and hand that in on canvas by 11:59 pm of the due date. (A paper option may also be made available, but that would be due by 5:00 pm of the due date.

**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 midterm exams will be closed book, closed notes, no phones, tablets or computers allowed. The final may be different. Listen in class for details.

**Final:** Wednesday, 12/15/21, 8:00 am 180 pts.

The final will be comprehensive with greater emphasis on the most recent material. There will be a review Tuesday 12/14 at 1:00 pm. Listen for details in class.

**Labs:** MEB 2267 120 pts.

Lab will be held every week, beginning the second week 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 either collect and grade these notebooks or scans submitted on canvas, Your TA will let you know which.

Two labs will be replaced by a special lecture during lab time. (Friday labs will have one week with both, because the last Friday of the semester is "reading day".)

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.

**Disclaimer:**

All information provided here is subject to change due to external factors or unintended typos or errors.