

**Course Information**

**Instructor:**

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**Description:**

**ECE 207 Electrical Engineering 3R-3L-4C F,W Pre: ES 203**

A course designed for engineers (other than electrical or computer) covering AC power, three-phase systems, magnetic circuits, transformers, machines, strain gauges, RTDs and thermocouples, noise and shielding, and feedback systems.

**Purpose:**

This course introduces some topics in circuits, power, machine and measurement and control that are likely to be useful in your professional work as a mechanical engineer. Knowledge of this material will also help you perform well on the electrical portion (about 10%) of the morning part of the Fundamentals of Engineering examination.

**Text:** *Pragmatic Electrical Engineering*, Wm. J. Eccles, (2010), available in the bookstore

**Grading:**

Grades will be assigned at the end of the quarter based on the grade weights and grading scale shown below:

Midterms (4)	60%	A	90 – 100
Homework	10%	B+	85 – 89
Laboratory Work	35%	B	80 - 84
Quizzes	5%	C+	75 - 79
		C	70 - 74
		D+	65 - 69
		D	60 - 64
		F	Below 60

**Examinations:**

In this course, examinations make up **60%** of the grade and warrant careful preparation. Examination questions will be based on the lecture material, textbook, homework, and laboratory work. The three midterms will be fifty minutes in duration during the regular class meeting time. Midterms and final examinations will be closed book and closed notes. You will be provided with a formula sheet that you will be able to review before the exams. It is your responsibility to memorize or derive any equation or formula missing from this document. You will be allowed to use a calculator on the exam, computers are not allowed.

**Homework:**

The homework is intended to help you to understand the concepts presented in the course, and to provide you with practice in problem solving. Homework must be completed using the problem solving format on engineering paper. The required format is described in the *Sophomore Engineering Curriculum Guidelines and Standards for Writing Assignments*. It is your responsibility to make your methods and results clear to the grader. Late homework will not be accepted.

Homework will be graded using a restricted scale of 0, 1, 2, 3, or 4:

- 4 Problem worked completely correctly.
- 3 Problem worked with minor errors.
- 2 Problem worked with substantial errors.
- 1 Problem attempted, but with no understanding.
- 0 Problem not attempted or unacceptable.

**Expectations:**

First and foremost, professional work is the norm in this course. All of your written work and your conduct in class are to be at the level of one who is studying a profession—the profession of engineering. This means a number of things:

1. Your work is neatly done in a professional manner, using formats specified.
2. Your work is honestly done. You are encouraged to discuss course material with classmates to help each other understand and assimilate the concepts. Nevertheless, distinguish between helping someone understand concepts and providing them with specific answers. You are expected to work individually on homework without reference to others' work.
3. Your work is done on time. As a rule of thumb, expect to put in **eight** hours per week outside of class doing homework, reading the text, and studying.
4. You are attentive and engaged in the lecture (i.e. not sleeping, reading the newspaper, surfing the web, doing homework for other courses, disturbing others with electronics).

**Laboratory sessions:***Laboratory Supplies:*

Each student team must check out a NI MyDAQ from the parts room. You will need to install the NI ELVIS software on your laptop, the CD is on your computer. You should have your laptop for every lab period. It is your responsibility to keep up with all parts and components.

Anything that is damaged or lost must be purchased by the student team. You will either be provided with parts or need to purchase small components for the weekly lab therefore, always bring change to the lab session. If you still own it, it may also be helpful to bring your ES203 kit to the lab session. You must perform all labs and submit the worksheet by the end of the week.

**Quizzes:**

There will be weekly quizzes that involve solving short problems or answering questions on required reading. The purposes for these quizzes are:

- to give me feedback on the current level of understanding of the class
- to give you feedback on your current level of understanding
- to give you practice on problems similar to the exam format
- to encourage collaborative learning in the classroom
- to also take attendance

**Re-grades:**

All requests for re-grades must be made in writing within one week of the return of the assignment or exam. The student should not make any marks on the document and must attach a memorandum that details a technical justification for the reason for the submission. It should be noted that based upon the request, the grade may increase, decrease or remain the same.

**Attendance:**

Regardless of whether formal attendance is taken, attendance at each class is expected. As a rule of thumb you should consider yourself seriously behind if you miss more than four classes in a four credit-hour course. According to our Academic Rules and Procedures, "A student whose total absences in a course, excused or unexcused, exceed two per credit is liable to fail the course." ***Eight absences in this course are grounds for failure.*** Missing an attendance check due to lateness may be counted as an absence.

Missed exams will not be made up. ***The final exam grade will be used to replace a missing test grade in the case of excused absences.*** Excused absence from an examination normally requires advance approval or formal documentation of an emergency. An examination that is missed for an unexcused reason will be given a grade of zero. Students are not excused from scheduled exams for intramural athletics or fraternity events.

**Calculators & Computers:**

You will need a calculator that can perform arithmetic with complex numbers (TI-83 plus or better). You are encouraged to practice doing the homework with the same calculator you will use on the exam. It is important to learn to do complex number and simultaneous equations (or matrix) calculations with your calculator to be successful in this course. Maple can be used on the homework problems to check your work, but not on the exams.

**Academic accommodation:**

Those students with documented special needs may request extra time on timed tests. Students need to contact me at least 2 business days prior to each exam to make the necessary arrangements.