ECE 203 DC Circuits Fall 10 - 11

Course Information and Syllabus

Description:

ECE 203 DC Circuits 3R-3L-4C F, W, S

Prerequisite: MA 111 and PH 112

Definition of voltage, current, energy and power. Ohm's Law. Non-ideal voltage and current sources. Measurement of voltage, current and resistance. Kirchhoff's Laws. Circuit simplification by series and parallel reduction. Thevenin, Norton and Maximum Power Theorems. Superposition Theorem. Mesh and Nodal Analysis. Two-Port Circuits. Operational Amplifiers. Integral laboratory.

You must get a C or better in ECE 203 to take ECE 204 – AC Circuits

Instructor:

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Textbook: J.W. Nilsson & S.A. Riedel, *Electric Circuits, **9***th edition, Prentice Hall, 2010.

What is expected of You:

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).

Grading:

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

Midterms	36%	A	90 – 100
Final Exam	24%	B+	85 – 89
Homework	10%	B	80 - 84
Laboratory assignments	15%	C+	75 - 79
Lab Practical Tests	5%	C	70 - 74
Quizzes	5%	D+	65 - 69
		D	60 - 64
		F	Below 60

Independent of point totals:

- You must satisfactorily *complete* each of the eight lab projects in order to receive a passing grade in the course

Examinations:

In this course, examinations make up **70%** of the grade and warrant careful preparation. Examination questions will be based on the lecture material, textbook, homework, and laboratory work. The three midterm tests 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 an excerpt from the NCEES FE Reference handbook that includes some formulas. It is your responsibility to memorize or derive any formula missing from this document.

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

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.

- **Problem sets are due each Thursday in class before the bell rings at the beginning of class.** Answers and solutions will be distributed using ANGEL.
- Homework turned in after the bell rings is late and will incur a **20%** penalty.
- Homework turned in after 5 pm on the due date will **not** be accepted.
- Arrange to turn in homework early if you will be away for job interviews, athletic events, etc.
- The required format is described in the document on Angel and in the ECE Department's guidelines and standards for writing assignments. It is your responsibility to make your methods and results clear to the grader. http://ece-1.rose-hulman.edu/ece/images/stories/files/ecewritingstandards.pdf

Laboratory Supplies:

Each student team must purchase an ECE203 kit with breadboard from the parts room before the first lab. Each individual student is required to purchase a laboratory notebook (10" x7-7/8", 80 sheets, 5x5 Quad Ruled, #26-251, available at the bookstore). The format for notebook entries can be found under the ECE Department's guidelines and standards for writing assignments. Additional specifications are provided in the *ECE203 – DC Circuits Laboratory Manual*

Prelabs:

Prelab exercises are due the day before lab at the beginning of class before the bell rings. Each student should do the pre-lab in their lab notebook and make a photocopy to turn in. The solutions to the prelab may be presented at the start of the lab period. Any student that has not completed the prelab must do it at the beginning of lab for zero credit. This team must still finish the laboratory project within the allotted time.

Laboratory Notebooks:

Laboratory notebooks will be collected at the conclusion of each laboratory period. The laboratory notebook will be graded and both members of the team share the notebook grade. Each team member must alternate submission of the lab notebook as well as circuit building on a weekly basis.

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.

If you miss a lab with an excused absence you need to make it up within 1 week without penalty. If you miss a lab without an excused absence, you need to make it up within 1 week and you will receive a grade of zero. ***If you come to lab more than 15 minutes late you need to complete the lab on your own.***

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.*** An 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 simultaneous equations (or matrix) calculations with your calculator to be successful in this course. Maple can be used on the homework problems, but not in 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.