

EE331 ELECTRICAL ENGINEERING I

Course Policy

Sections 2121 & 3321

Fall 2007

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1 Introduction

The objective of this course is to apply the electrical principles you learned in SP212 to more complex circuits representative of those you will see extensively in your career as a Navy or Marine Officer. The course will use lectures and homework problems to teach you theory and frequent practical exercises (PEs) to reinforce this theory. It will also prepare you for the electrical engineering portion of the Fundamentals of Engineering exam. I encourage you to plan to take it while you are at the Naval Academy. You will never be more prepared for it than you will be here.

This course will draw extensively from what you learned in past mathematics and physics courses. Moreover, most of the material later in the semester builds upon concepts that are covered early in the semester.

2 Textbook

1. Charles K. Alexander and Matthew N. O. Sadiku, *Fundamentals of electric circuits*, 3rd edition, McGraw-Hill, Boston, 2007.
2. Allan R. Hambley, *Electrical Engineering Principles and Applications*, 4th edition, McGraw-Hill, Boston, 2007.

You will need these texts in the spring semester. Do not dispose of them at the end of this semester.

3 Web sites

The course web site is at this URL:

<http://www.usna.edu/EE/ee331/>.

Additional information specific to sections 2121 and 3321 is at this URL:

<http://www.usna.edu/Users/ee/cameronc/EE331/EE331.htm>.

4 Readings

Readings for each lesson are as specified in the syllabus at URL <http://www.usna.edu/EE/ee331/>. I expect you to have read the material *prior* to the class in which we discuss it.

5 Problem Solutions

Make a practice of carefully organizing all your written work and making it legible. In the case of homework assignments, if you also include a statement of the problem, you will find it a useful study aid. Without the inclusion of the problem, it will probably be useless for that purpose.

A properly formatted solution contains definitions of all variables, conveys ideas algebraically rather than numerically, includes a schematic diagram if appropriate, and flows from left to right and top to bottom. Plots of data require a title; labels, units, and a scale for the axes; and a legend if more than one graph is shown on a single plot.

Include all measurement units (e.g., volts or amperes) where appropriate. Use *Système Internationale* (SI) unit symbols and prefixes, e.g., 15.3 mV or 213.4 μ A.

6 Homework

Homework assignments for lessons also are listed in the syllabus posted at URL <http://www.usna.edu/EE/ee331/>. I will collect assignments at the *beginning* of the second class session following that beside which they are listed in the syllabus. For example, the problem set for Lesson 3 is due at the beginning of Lecture 5. Solutions will be posted on the web site a week or so after problems are assigned.

If you will be absent from class, submit your homework to me in advance or get a reliable classmate to submit it for you. I will grade selected homework assignments. Details of my grading scheme are shown below. I will not grade late assignments, but I will not count the three assignments with the lowest grades.

7 Practical Exercises (PE)

You will not have access to the lab except during working hours. For safety reasons, if you work in the lab outside of class time, you must not be alone. You may come in with someone else who is taking the course with you or with any other midshipman.

I encourage you to help and get help from other students in the lab. You may work in pairs or singly. You may not work in teams of three or more. If you work in pairs, submit a single copy of the PE to me with both your names shown upon it.

8 Quizzes, Tests, and Exams

Midterm Tests There will be three closed-book midterm tests during class at the five-, nine-, and 13-week points. Each will take 45 minutes. The second two of these tests may cover information already covered on earlier midterm tests. You may use a calculator and a single, one-sided, 8 1/2" × 11" sheet of paper with your own hand-written notes on it. Discussing the contents of the exam with other students from the day the exam is administered to the day the exam is returned is strictly forbidden and constitutes violation of the USNA Honor Concept. Any other communication concerning the contents of the exam during this interval is likewise forbidden.

Lab Practical The lab practical will test your ability to properly build circuits and measure parameters

as required. Familiarization with the lab bench and equipment will be achieved through the practical exercises (PE's) assigned prior to the administration of the lab practical. The length and details of the test will be promulgated later.

Final Exam The final exam will be a cumulative, closed-book exam three hours (180 minutes) in length. You may use a calculator and a single, one-sided, 8 1/2" × 11" sheet of paper with your own hand-written notes on it. All students must take the final exam.

Quizzes Quizzes will be held without prior notice. Be prepared for a quiz at any time. You may use a calculator and a single, one-sided, 8 1/2" × 11" sheet of paper with your own hand-written notes on it.

General Exams will have a strict start/stop time. I will announce the start and end of each exam by the commands "*Begin work*" and "*Cease work*." You shall immediately place any writing instrument in your hand on the desk/table top and close the exam (cover sheet on top). I shall keep the class apprised of the time remaining.

9 Collaboration

Collaboration with your fellow Midshipmen is permitted and encouraged. Such collaboration is a hallmark of all professional officers. However, the assignment you hand in must be your own. Claiming someone else's work as your own—plagiarism—is totally unacceptable. Collaboration is not permitted during quizzes, tests, exams, or the lab practical test.

10 Calculators

You may use a calculator in every class, lab, quiz, test, and exam. You are not permitted to store functions, programs, or text in your calculator for use during quizzes, tests, or the final exam. I will not permit you to share calculators during quizzes, tests, or the final exam. If your calculator doesn't work and you have not brought spare batteries, plan to do arithmetic manually for you have no alternative.

11 Grades

I score all problems out of 4.0 (or an integral multiple of 4.0 for more difficult problems.)

I award an A (4.0) for a solution that is well organized, easy for me to read, easy for me to understand, and gives a correct answer.

You will get a B (3.0) if your solution was generally well done, but lacked one or two features that I deem to be significant.

A grade of C (2.0) shows a minimal level of understanding. It will result if you fail to explain your work adequately or demonstrate a lack of understanding of something that I deem to be essential.

A grade of D (1.0) indicates that you have shown a very weak grasp of how to solve a problem or that your presentation of the solution is all but completely incomprehensible to me.

I will award a grade of F (0.0) if you answer the wrong problem, write down nonsense, or fail to submit a solution.

You cannot get a good grade without using algebra to show me your reasoning and including suitable, properly labeled circuit schematics, graphs, or other figures. Do not perform numerical calculations until you have completed a problem algebraically.

After I have graded each problem in a homework assignment, practical exercise (PE), or lab practical test, I scale the result to a 4.0 scale and round off the result to the nearest whole number. (I do not round grades off in the case of quizzes, tests, or the final exam.)

I make an initial determination of course grades using the weightings shown in Table 1 on page 4. I award a letter grade of A for a numerical grade of 3.5 or better; B for 2.5 to 3.5; C for 1.5 to 2.5; D for 0.5 to 1.5; and F for less than 0.5. However, I reserve the right to alter course letter grades up or down based on your class participation, trends, and my overall impression of your performance.

12 Extra Instruction

I would prefer that you make an appointment by e-mail for EI. See my schedule at

<http://www.usna.edu/Users/ee/cameronc/>

for a list of generally open times.

For EI, bring your course notes, homework problems, and specific questions or problems confronting you. If you are having trouble learning the material and applying it to solving problems, it would be wise to get extra instruction.

I will accept phone calls at home up to 2200 and will do my best to give decent assistance by telephone. I am almost invariably in my office by 0730, if not earlier.

Finally, you may ask me questions via e-mail, too.

13 Administrative Matters

13.1 Questions

Feel free to ask questions in class. I would rather clear up a difficulty immediately than see you cease all progress because of a misapprehension. If it is indicated, I may ask you to schedule extra instruction.

13.2 Sleeping in Class

Even if you are drowsy, *do not sleep in class*. Stand up quietly and go to the back of the room. You do not need my permission to do so. When you are ready, quietly return to your seat. If you see your neighbors nodding off, please awaken them discreetly.

13.3 Omitted Material

I cannot cover everything during class. If some topic or example is not covered, that does not mean it is unimportant. Refer to the EE331 course objectives to make sure you have not overlooked anything.

13.4 E-mail and the Web

I plan to rely heavily on e-mail and the web to communicate with you. Check your e-mail at least daily so you don't miss something I send you. Bear in mind that e-mail is not instantaneous: although the mail may be in my box, I may not read it for some hours.

The course web page is at

<http://www.usna.edu/EE/ee331/>.

13.5 Absence/Makeup Policy

You must notify me prior to missing class if you will be absent. Arranging for makeups of exams, quizzes, or

	6-week	12-week	16-week	Final Grade
Final Exam	—	—	—	25.0%
Lab Practical	—	—	6.7%	5.0%
Exams (3)	37.5%	54.5%	60.0%	45.0%
Quizzes	25.0%	18.2%	13.3%	10.0%
Homework	12.5%	9.1%	6.7%	5.0%
Practical Exercises	25.0	18.2%	13.3%	10.0%
Class Participation	subjective			

Table 1: Grade Weightings

labs is *your responsibility* and must be done within one week.

13.6 Section Leader's Duties

I will appoint a Section Leader and an alternate during the first class. The alternate will fill in for the Section Leader if the latter is absent. I require the Section Leader to

- call the section to attention and report the names of absent students at the start of class;
- collect and submit all homework and other assignments to me at the start of class. Separate different assignments into different piles;
- call the class to attention for dismissal at the end of class;
- muster the class in the Maury Hall parking lot during emergencies, fire drills, etc., and report absences to me; and
- contact the EE Department by phone (3-6150) if I am more than 10 minutes late for class to ask my whereabouts. If I am not expected to arrive at all, direct the class in a study period, collect all homework, and deliver it to the EE Office before the close of business that day. Do not dismiss the class early.

I am obliged to report Midshipmen who are late or absent or who leave early.

13.7 Eating and Drinking in Class

No drinking is allowed in the lab area of the classroom. Food and drinks are otherwise permitted in the classroom provided drinks are in a covered container and

provided you properly dispose of trash. You are responsible for keeping the classroom clean. Abuse of this privilege will result in food and drinks being banned from the classroom.

13.8 Contacting the Instructor

Instructor: CDR Charles B. Cameron
Telephone: (410) 293-6181 (Work)
(410) 757-8876 (Home, up to 2200)
E-mail: cameronc@usna.edu
Office: Maury Hall 336