

Clemson University
Department of Electrical and Computer Engineering
ECE 307
Basic Electrical Engineering
Summer Semester I, 2009

Professor:

Dr. Timothy Burg
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Text (required):

Principles and Applications of Electrical Engineering, 5th edition, by G. Rizzoni, 2007, McGraw-Hill, ISBN: 0-07-322033-7
As an alternative to the hardcopy, an electronic version of the book is available from the publisher at
<http://www.mhhe.com/irwin/ebooks/web/index.html>

Prerequisites: MTHSC 206 and PHYS 221 with a grade of C or better.

Co-requisites: ECE 309 for certain majors

Office Hours:

Online question and answer sessions will be scheduled through the Adobe Breeze server. All students can access these meetings through a website using a browser-based interface. The initial schedule is:

Tuesday 9-10AM, Wednesday 1-2PM, Thursday 7-8 PM

These hours may be adjusted based on feedback from the class.

Students should use Office Hours or routine questions about notes, homework, or course mechanics. The instructor will be available during most normal business hours to address any questions regarding the availability of the electronic materials such as Blackboard errors.

Goals of the Course:

The goal of this course is to provide non-Electrical Engineering majors with understanding of a few of the major topics within electrical engineering that you might need in your future career. The knowledge you acquire should enable you to then teach yourself or intelligently converse and interact with EE's on projects in the future. This class is an overview of the basics of electrical engineering including DC and AC circuit theory, AC power distribution, and numerous electrical devices, apparatus, and digital systems.

Attendance:

Students will access all course materials, including tests and lectures, through the University Blackboard software. No on-site attendance is required. Students are responsible for all material covered and all assignments given in every lecture. Some lectures may cover material not found in the textbook. It is the responsibility of each student to follow the schedule.

Important Administrative Dates:

May 22 Last day to drop a class or withdraw from the University without a W grade

June 2 Last day for instructors to issue midterm evaluations

June 4 Friday Last day to drop a class or withdraw from the University without final grades

Testing Procedures:

Students may test on campus or remotely with a proctor. The tests will be made available at a specified day, known well in advance, on the web through Blackboard. You must take the test on that day (8:00AM-8:00pm) and will generally have *1 hour to complete the test from the time you start*. You will need internet access to take the tests. Be prepared for this. There will be no makeup tests. The only excuse for missing a test deadline will be in the event of true, documentable personal emergencies (i.e. hospitalization, death in the family, etc.). If such a circumstance arises, you must let me know immediately. Otherwise, a grade of zero will result from a missed or past-the deadline test. If you have a **bonafide** conflict with a scheduled test, please let me know far in advance, and we can work out an alternative. The exams are offered in two possible ways:

1. We will offer a traditional exam time on the Clemson campus at 5:00-6:00 pm on the day of the test. A proctor will be supplied and you must bring your laptop to class and take the test through Blackboard.

2. You supply a Proctor at your location. The proctor will be someone in a position of authority: supervisor at work, teacher or professor, librarian, etc. This person cannot be your parent, spouse, or sibling, or other immediate

family member. The proctor will be required to have email access. They will supervise you while you take the exam. The proctor will sign a statement stating that they personally supervised your examination and that all rules were followed.

Generally, computer problems are not excusable, the Blackboard system is very reliable and documents your actions.

Grading:

Final grades will be assigned according to weighted overall performance where each student's work will be weighted according to the schedule:

6 Tests: 14% each
Final Exam: 16%
100%

and a final grade assigned based on the scale

90-100 -> A
80-90 -> B
70-80 -> C
60-70 -> D
<60 -> F.

Any assignment or test missed will be given a grade of zero and there is no policy of dropping the lowest grades.

Testing:

The test dates are shown in the schedule.

Formula Sheets and Calculators on Tests:

You can create your own formula sheets. For each test you may add an additional front side of an 8 1/2"x11" paper. That is, for Test 1 you have 1 page, Test 2 = 2 pages, etc. You may use any calculator of your choice and it is recommended that you have one that can perform complex matrix operations, e.g., TI 89. **No other electronic devices including cell phones, iPods, etc are allowed during tests.**

Academic Integrity:

No cheating will be tolerated. Collaboration on homework assignments is acceptable as long as it is a shared effort. Keep in mind that the tests will draw from the homework, thus it is advantageous for each student to understand every homework assignment. The official statement on Academic Integrity is as follows:

"As members of the Clemson University community, we have inherited Thomas Green Clemson's vision of this institution as a 'high seminary of learning.' Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty distracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form."

Tentative Course Outline:

<u>Topics Covered</u>	<u>Hours</u>
1. Electrical quantities and circuit elements	2
2. DC circuits, Kirchoff's laws, network theorems	5
3. AC circuit analysis	4
4. Steady-state AC circuits, reactive power, polyphase	4
5. Ideal transformers	1
6. AC and DC motors	2
7. Signal processing circuits, op-amps, rectifiers	3
8. Logic devices and digital circuits and methods	4
9. Tests	3

Total Hours: 28