E E 2320-001 Summer 2009

Basic Information

Catalog Data

E E 2320. CIRCUIT ANALYSIS (3-0) 3 hours credit - For non-electrical engineering majors. Basic circuit concepts of R, L, and C components. Kirchhoff's laws, network analysis, loop and node equations, topology, basic network theorems. Steady-state A-C phasor analysis, operational amplifiers, filtering and digital circuits. Concurrent laboratory experiments complement lecture topics. Prerequisite: MATH 2325, PHYS 1444.

Grading Policy

Point Values for Activities

- ♦ Exam I..... 27%
- ♦ Exam II 27%
- ♦ Homework 12%
- ♦ Final Exam 34%

Percentages for Grades

- ♦ 88% -100% A
- ♦ 75% - 87% B
- ♦ 63% - 74% C
- ♦ 50% - 62% D
- ♦ 0% - 49% F

Homework Submissions

Homework assignments will be found under the "Homework" button in the navigation panel (to the left of this page). After you have selected this button, you will be asked to log in as a a user. You will need to select a unique user name (of six to ten characters or digits) as well as a password. In order to receive credit for your homework efforts, be sure to use the same user name that you submit on your Ethics Statement. Bear in mind that your password is *case sensitive*. Remember your password. It is independent from the password you use on the UTA network administered by OIT. Once you are logged in, select "See Problem List" to get a list of the homework problems. Work on the column for the assignment you need, i.e., *HW01*, *HW02*, etc. When you enter your answers, they will be checked. When you get the problem correct, the

data base records your results. You may have additional user accounts on the homework site just for practice. Just remember that ***only*** your official user account will be used for grading.

Class Attendance

Although many of the transactions for this course are made through this web site, it is important that you attend class regularly. In the education process, there is no substitute for being in the classroom. In class, you have the opportunity to ask questions, network with other students and get additional information not available on the web site. Be there.

Exams

The two major examinations and the comprehensive final examination will be old-fashioned paper, pencil and calculator exercises. Although you may not always be asked to produce it, you are expected to bring your student ID card to every exam.

If you miss an exam...

Exams are very important. You should be prepared for each exam and deliver your best performance on it. Observe the class schedule and be aware when the exams are being held. If you must miss an exam for any reason, your make-up exam will be the portion of the comprehensive final exam that corresponds to the exam you missed; i.e., if you miss Exam II, the points you earn on the second portion of the final will be expanded to cover Exam II's 27%. Thus that portion of your final would be worth 44% of your course grade instead of 17%. That puts a lot of pressure on you for the final, so try to be at all the exams.

Textbook, Calculator and Software Requirements

- *Electrical Engineering Principles and Applications* , 4th Edition, by Allan R. Hambley, © 2008 by Pearson Education, Inc.; ISBN 0-13-198922-7
- A good-quality scientific calculator. In addition to the usual trigonometric, exponential and other arithmetic functions, your calculator must have the capability of performing operations on complex numbers and solving simultaneous equations with real and complex coefficients. We recommend the HP48GX, HP49G, TI-100, TI-89, TI-92+, TI-86 or TI-85.
- Acrobat 9.0 Viewer, by Adobe (another free download from the internet)
- A good web browser: This web site is best viewed from the Microsoft Internet Explorer browser. Versions 5.5, 6.0 and 7.0 have been tested with good results. Netscape Communicator 6.2 performs fairly well, but it will not show the "mouseover" messages that reveal information about the buttons, and other graphics on this web site. Netscape 4.7 is **not** recommended, since that browser does not support stylesheets nor special characters and therefore will not properly display many of the pages for this site.

Adobe Acrobat Reader 9.0

This free program can be downloaded from
http://www.adobe.com/products/acrobat/readstep2.html.

Student Learning Outcomes

This course serves Civil Engineering students, Industrial Engineering students and Mechanical and Aerospace engineering students for the purpose of learning the fundamentals of electric circuit theory. At the completion of the course students will have gained the following knowledge and skills:

- To understand and use Ohm's Law, the Passive Sign Convention and Kirchhoff's laws.
- To understand the physical nature of the various electric circuit elements, including v-i relationships, energy and power.
- To perform node voltage analysis and mesh current analysis on electric circuits.
- To perform first-order transient analysis on R-L and R-C circuits.
- To analyze circuits that use operational amplifiers.
- To use the phasor domain to analyze ac circuits with ideal transformers and calculate the transfer of real and reactive power and the apparent power and power factor.
- To analyze analog filters for signal processing.

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 ¾ The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act ¾ (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Dishonesty

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22).