EE 212 - Fundamentals of Circuits and Devices
Fall 2012

3.0 Credits
Prerequisite: PHYS 212

Instructor:
Mr. Andy Mayers
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Objectives:

This course provides fundamental education in electrical circuit analysis techniques to non-electrical engineering majors. Students should be able to do the following upon completion of this course:

1. Analyze simple DC resistive circuits using Ohm's law, Kirchhoff's current and voltage laws.
2. Apply node-voltage & mesh-current methods.
3. Understand difference between ideal sources and practical sources.
4. Determine Thevenin and Norton equivalent parameters.
5. Understand superposition, and source transformation techniques.
6. Combine capacitors or inductors into equivalent elements.
7. Apply continuity conditions and DC steady-state conditions to RLC circuits.
8. Find energy stored in capacitors and inductors in DC steady-state circuits.
9. Apply equations for forced and natural transient responses for series RL, RC circuits.
10. Apply phasor analysis to AC circuits.
11. Determine complex power and find load impedance for maximum power transfer.
12. Use ideal transformers in basic circuits.
13. Understand residential electrical basics and safety issues.
14. Find voltages and currents for inverting and non-inverting Op-Amp circuits.

Textbook:

Electrical Engineering, Principles and Applications Penn State Edition, by Allan R. Hambley. ISBN 0-558-90521-8 OR ISBN 0-558-72655-0 (or full text, Electrical Engineering, Principles and Applications, by Allan R. Hambley 5th Edition ISBN 0-13-213006-8)

Grading Policy:

On-Line Quizzes	-	10%	-	Drop lowest grade
Exam #1	-	30%	-	10/2/2012 8:15 PM Room TBA Equation Sheet Provided
Exam #2	-	30%	-	11/6/2012 8:15 PM Room TBA Equation Sheet Provided
Final Exam	-	30%	-	TBA Equation Sheet Provided

Course Delivery:

This course is delivered through Angel. Notes, lectures, sample problems and solutions are available through the course contents page. On-line Quizzes are also delivered through Angel with Due dates at midnight eastern time the first day of classes the week after the quiz is assigned. There are two proctored exams during the semester and a final exam during finals week. Times and locations are posted on the course contents page. The number of quizzes and due dates are subject to change during the semester.

Exam Policy:

If you have a conflict with a midterm exam, you must submit a conflict exam request form to your instructor no later than one week before the exam; the form is posted on the web page in the folder labeled "Exams". If you have a conflict with the final exam, you must file a "Final Exam Conflict" with the Registrar's Office between Monday, Oct. 1 and Sunday, Oct. 21. If you miss a midterm exam due to a medical or family emergency, you must contact your professor the day you return to campus to schedule a make-up exam.

Academic Integrity:

Although discussion with your classmates is encouraged, each exam and quiz that you submit must represent only your own understanding and effort. Similarly, you may not aid or abet anyone else in misrepresenting his/her understanding and effort on any exam or quiz. Lapses of academic integrity will be handled through established university procedures, which can be viewed at the following web page: http://www.psu.edu/dept/oue/aappm/G-9.html.

Students with Disabilities:

Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services website at http://equity.psu.edu/ods/.

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at http://equity.psu.edu/ods/guidelines/documentation-guidelines). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.