Department of Electrical Engineering

EENG 2610: Circuit Analysis

Fall 2012

Monday and Wednesday, 09:30 AM - 10:50 AM
Classroom: NTDP B217

Instructor

Ike Agbor,
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Office Hours: Monday & Wednesday, 11:00 AM - 12:00 PM
(*Additional appointments can be requested by email.*)

Course Description

• Introduction to electrical elements, sources and interconnects. Ohm's law, Kirchoff's law, superposition and Thevenin's theorems will be, introduced. The resistive circuit, OP-Amp, RL, RC circuits, and Sinusoidal analysis will also be treated

Prerequisites

• MATH 1720, Co-requisite: PHYS 2220/2240

Course Objectives

By the end of the course, you will
• Understand basic concepts of DC and AC circuit behavior
• Develop ability to apply circuit analysis techniques to simple RLC and op-amp circuits
• Develop ability to develop and solve circuit analysis problems.
(ABET outcomes: a, e)

Required Textbook

• Basic Engineering Circuit Analysis, 9th Edition, John Wiley & Sons, 2008
Authors: J. David Irwin and R. Mark Nelms

ISBN: 978-0-470-12869-5

Course Requirements and General Policies

• Class attendance is mandatory. Lectures and class discussions will contain vital information needed to do well on the exams.
• Everyone must turn in individual homework. Copying of other's homework will be, treated as academic dishonesty.
• If you arrive late, please enter quietly and sit down. Do not walk in front of speakers or disrupt the class in any way.
• Please, remember to turn off phones prior to class.
• Please, do not wait until the last minute to discuss remedial measures. If you are having trouble with this class, please come by my office during office hours. I am also available by email.
• Please, visit http://www.unt.edu/csrr for your rights and responsibilities.

Disability Accommodation

• The University of North Texas (UNT) complies with Section 504 of the 1973 Rehabilitation Act and with the Americans with Disabilities Act of 1990. UNT provides academic adjustments and auxiliary aids to individuals with disabilities, as defined under the law. Among other things, this legislation requires that all students with disabilities be, guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you, believe you have a disability requiring accommodation, please see the instructor and/or contact the Office of Disability Accommodation (http://www.unt.edu/oda) at 940-565-4323 during the first week of class. It is the responsibility of students with certified disabilities to provide the instructor with appropriate documentation from the Dean of Students Office.

Assignments and Exams

• No late assignments will be, accepted and emailed assignments will be accepted except in extenuating circumstances. Homework is due before the class in the following week.
• There will be three exams (this includes the final exam). Exams will, be based on text readings, handouts, class exercises, class lectures and discussions, and homework assignments. Students are responsible for all text material, regardless if the material is, reviewed in class or not. Missed exams would be made up, if there is supporting documentation for university excused absence. If you know in advance that you will miss an exam, you must contact me before the scheduled exam.

Grading Policies

Quizzes: 5%: Be aware that a quiz may be administered at the beginning, middle or end of a class session. It is your responsibility to be present during a quiz as there is no make-up for a missed quiz. The lowest score of the quiz may be dropped for the purposes of calculating your final grade.

Homework: 15%: Late homework is accepted, but with a 10% deduction per day until the solution is handed (usually one week after the due date of the homework). If you turn in your homework after the solution is distributed, you will not receive any credit. Your lowest homework score may also be dropped.

Two Middle Exams: 25% each: Make up exams will be possible only with a doctor's letter or letter of absence for a school-sponsored event. Were you to have a serious reason for missing an exam, you must contact me before the scheduled exam period to notify me that you cannot take the exam and provide accompanying documentation.

Final Exam: 30%: The final exam is comprehensive

• Final letter grade distribution: A=100-90, B=80-89, C=70-79, D=60-69, F=0-59

Course Outline and Tentative Schedule

You can find the lectures notes and homework assignments in the Blackboard.

Week	Date	Day	Topics	Readings	
1	08/29	W	Class 1: Basic Concepts	1.1, 1.2, 1.3	
2	09/05	W	Class 2: , Ohm's Law, Kirchhoff's Laws	2.1, 2.2	
3	09/10	M	Class 3: Single-Loop Circuits, Single-Node-Pair Circuits	2.3, 2.4	
	09/12	W	Class 4: Resistor Combinations, Circuits with Dependent Sources	2.5, 2.6, 2.7, 2.8	HW1
4	09/17	M	Class 5: Nodal Analysis	3.1	

	09/19	W	Class 6: Loop Analysis	3.2	HW2
5	09/24	M	Class 7: Op-Amp Models	4.1, 4.2	
	09/26	W	Class 8: Op-Amp Circuits	4.3, 4.4	HW3
6	10/01	M	*Review*		
	10/03	W	**Mid-term Exam 1**		
7	10/08	M	Class 9: Linearity, Superposition	5.1-5.2	
	10/10	W	Class 10: Thevenin's Theorem	5.3	
9	10/15	M	Class 11: Norton's Theorem, Maximum Power Transfer	5.3, 5.4	HW4
	10/17	W	Class 12: Capacitors, Inductors	6.1. 6.2	
10	10/22	M	Class 13: C L Combinations, RC Op-Amp	6.3, 6.4	
	10/24	W	Class 14: First-order Circuits	7.1, 7.2	
11	10/29	M	Class 15: Second-order Circuits	7.3	HW5
	10/31	W	*Review*		
12	11/05	M	*Lab Demo*		
	11/07	W	**Mid-term Exam 2**		
13	11/12	M	Class 16: Sinusoids, Phasors, Impedance, Admittance	8.1- 8.5	
	11/14	W	Class 17: Basic AC Circuit Analysis using Kirchhoff's Laws	8.7	
14	11/19	M	Class 18: AC Circuit Analysis Techniques	8.8	HW6
	11/21	W	Class 19: Power, Maximum Average Power Transfer, RMS values	9.1 – 9.4	
15	11/26	M	Class 20: Mutual Inductance	10.1	
	11/28	W	Class 21: Energy Analysis, Ideal Transformer	10.2, 10.3	HW7
16	12/03	M	Class 22: Variable Frequency-Response Analysis, Resonant Circuits, Filter Networks	12.1, 12.2, 12.3, 12.5	HW8
	12/05	W	*Review*		
	12/08-12/14		Final Exams		
