

University of North Texas, College of Engineering

Department of Electrical Engineering

EENG 2610: Circuit Analysis

Spring 2011

Tuesday and Thursday, 11:00 AM - 12:20 PM

Classroom: NTDP B217

Instructor

- Dr. X. Li, Office: NTDP B231, Tel: (940) 891-6875, Email: xinrong@UNT.EDU
Office Hours: Tuesday and Thursday, 3:30 - 4:30 PM
(Additional appointments can be requested by email.)
- TA and TA's Office Hours: TBD
Office and Office Hours: TBD

Course Description

- Introduction to electrical elements, sources and interconnects. Ohm's law, Kirchhoff's law, superposition and Thevenin's theorems are introduced. The resistive circuit, OP Amp, RL, RC circuits, Sinusoidal analysis.

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, 10th Edition, John Wiley & Sons, 2011
Authors: J. David Irwin and R. Mark Nelms
ISBN: 978-0-470-63322-9

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. Simply copying other's homework will be treated as a violation of academic honesty.
- If you arrive late, please enter quietly and sit down. Do not walk in front of speakers or disrupt the class in any other way.

- Please remember to turn off phones prior to class.
- Please do not wait until the last minute. 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

- There will be 11 homework assignments. No late assignments will be accepted and no emailed assignments will be accepted, except in extenuating circumstances. Homework is due before the class in the following week.
- There will be 3 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 of whether we review the text material in class or not. You will be allowed to make up a missed exam only if you have a documented university excused absence. If you know in advance that you will miss an exam, you must contact me before the scheduled exam.

Grading Policies

- Attendance, 5%
- Homework, 20%
- Two Mid-term Exams, 50% (25% for each)
- Final Exam, 25%
- There will be no extra credits.
- Final accumulated number score is on a 100 point scale.
- Final letter grade distribution: A=100-85, B=75-84, C=65-74, D=55-64, F=0-54

Course Outline and Tentative Schedule

You can find the lectures notes and homework assignments in the [Blackboard](#).

Week	Date	Day	Topics	Readings	HW Due
1	01/18	T	Class 1: Basic Concepts	1.1, 1.2, 1.3	

	01/20	Th	Class 2: Ohm's Law, Kirchhoff's Laws	2.1, 2.2	
2	01/25	T	Class 3: Single-Loop Circuits, Single-Node-Pair Circuits	2.3, 2.4	
	01/27	Th	Class 4: Resistor Combinations, Circuits with Dependent Sources	2.5, 2.6, 2.7, 2.8	HW1
3	02/01	T	Class 5: Nodal Analysis	3.1	
	02/03	Th	Class 6: Loop Analysis	3.2	HW2
4	02/08	T	Class 7: Op-Amp Models	4.1, 4.2	
	02/10	Th	<i>Review</i>		HW3
5	02/15	T	Mid-term Exam 1		
	02/17	Th	Class 8: Op-Amp Circuits	4.3, 4.4	
6	02/22	T	Class 9: Linearity, Superposition	5.1-5.2	
	02/24	Th	Class 10: Thevenin's Theorem	5.3	HW4
7	03/01	T	Class 11: Norton's Theorem, Maximum Power Transfer	5.3, 5.4	
	03/03	Th	Class 12: Capacitors, Inductors	6.1, 6.2	HW5
8	03/08	T	Class 13: C L Combinations, RC Op-Amp	6.3, 6.4	
	03/10	Th	Class 14: First-order Circuits	7.1, 7.2	HW6
9	03/15	T	<i>Spring Break, no classes</i>		
	03/17	Th			
10	03/22	T	Class 15: Second-order Circuits	7.3	
	03/24	Th	<i>Review</i>		HW7
11	03/29	T	<i>Lab Demo</i>		
	03/31	Th	Mid-term Exam 2		
12	04/05	T	Class 16: Sinusoids, Phasors, Impedance, Admittance	8.1-8.5,	
	04/07	Th	Class 17: AC Circuit Analysis Techniques	8.7	
13	04/12	T	Class 17: AC Circuit Analysis Techniques	8.8	HW8
	04/14	Th	Class 18: Power, Maximum Average Power Transfer, RMS values	9.1-9.4	
14	04/19	T	Class 19: Mutual Inductance	10.1	HW9
	04/21	Th	Class 20: Energy Analysis, Ideal Transformer	10.2, 10.3	
15	04/26	T	Class 21: Variable Frequency-Response Analysis, Resonant Circuits, Filter Networks	12.1, 12.2, 12.3, 12.5	HW10
	04/28	Th	<i>Review</i>		HW11
16	05/03	T	<i>Pre-Finals Week, No Class</i>		
	05/05	Th			
17	05/10	T	Final Exam, 10:30 AM - 12:30 PM		

Useful Links

- Course webpage: <http://www.ee.unt.edu/public/xinrong/courses/EENG2610/Spring11>
- UNT Academic Calendar: <http://www.unt.edu/calendars-events.htm>
- Office of the Registrar: <http://essc.unt.edu/registrar> (schedule of classes and exams, etc.)
- Eagle Student Services Center: <http://essc.unt.edu/>