Electrical Engineering Department

EE 202: Electric Circuits I
First Semester, 2013 (131)

Instructor:
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Office Hours: SU, TU, TH 10:00 – 11:00 AM Or by appointment

Course Content:

Circuit elements, Basic laws: Ohm's, KVL, KCL, and Power calculations. Resistive circuits: voltage and current divider rules, Dependent sources. Circuit analysis techniques: Nodal and Mesh analysis. Network theorems: Thevenin's Norton's, Source transformation, Superposition, Maximum power transfer. Energy storage elements: definitions and voltage-current relationships. Responses of first order LR and LC circuits. Responses of second order circuits. Phasor steady-state sinusoidal circuits analysis..

Pre-requisite: MATH 102 and PHYS 102

Text:

Electric Circuits, James Nilsson and Susan Riedel, 9th edition, Prentice Hall, 2011.

Other Texts

- *Fundamentals of Electric Circuits,* Charles Alexander and Matthew Sadiku, McGraw Hill, 2004.
- Clayton R. Paul, *Fundamentals Of Electric Circuit Analysis*, 1st Edition, Wiley & Sons. Inc. 2001.

Course Outcomes:

1) Apply knowledge of mathematics, science, and engineering to the analysis and design of electrical circuits.
2) Identify, formulate, and solve engineering problems in the area circuits and systems.
3) Design an electric system, components or process to meet desired needs within realistic constraints.

Grading Policy:

Class Work (HW,QZ, Attendances ,etc) : 25%, Two Major Exams: 40%, Final: 35%.

Tentative Schedule			
Week		**Topic**	**Reading assignment**
1	1 Sep.	Circuits Variables, Sources, Power and Energy	1.1-1.6, 2.1
2	8 Sep.	Ohm's Law, KCL, KVL, Dependent Sources	2.2-2.5
3	15 Sep.	Resistive Circuits, Nodal Analysis	3.1-3.4, 4.1
4	22 Sep.	Nodal Analysis (Continued), Mesh Analysis	4.2-4.5
5	29 Sep.	Mesh Analysis, Source Transformation	4.6-4.9
5	**First Major Exam: Thursday 3 October**		
6	6 Oct.	Thevenin and Norton Equivalent Circuits	4.10-4.11
Eid Haj Vacation Thursday Oct 10- Sunday Oct 20			
7	22 Oct.	Maximum Power Transfer, Superposition	4.12-4.13
8	27 Oct.	Inductors, Capacitors	6.1-6.3
9	3 Nov.	First Order Circuits	7.1-7.3
10	10 Nov.	First Order Circuits (Continued)	7.4-7.6
11	17 Nov.	Second Order Circuits	8.1-8.2
11	**Second Major Exam: Sunday 17 November**		
12	24 Nov.	Second Order Circuits (Continued)	8.3-8.4
13	1 Dec.	First Order Circuits, Sinusoidal Response, Complex Numbers.	9.1-9.2, App. B.
14	8 Dec.	Frequency Domain Analysis	9.3-9.5, 9.7
15	15 Dec.	Frequency Domain Analysis (continued)	9.8, 9.9, 9.12
16	22-24 Dec.	Review	
17	**Final Exam: Monday Dec 30 8:00 AM**		

Homeworks are due on dates shown on the class website.
No Late submissions will be accepted.

Faculty	HW #	Sections	Date Posted	Date Due	Solution posted
Al-ahamry	**1**	1.1 – 1.6 2.1-2.5	**Sun 8/9**	**Sun 15/9**	**Mon 16/9**
Al-ahamry	**2**	3.1 – 3.4 4.1-4.4	**Sun 22/9**	**Sun 29/9**	**Mon 30/9**
Balghonaim	**3**	4.5 – 4.9	**Sun 6/10**	**Sun 20/10**	**Mon 21/10**
Balghonaim	**4**	4.10 – 4.13	**Sun 27/10**	**Sun 3/11**	**Mon 4/11**
Wesam	**5**	6.1 – 6.3 7.1-7.2	**Sun 3/11**	**Sun 10/11**	**Mon 11/11**
Masoud	**6**	7.3-7.6 8.1 – 8.4	**Sun 24/11**	**Sun 1/12**	**Mon 2/12**
Qurishy	**7**	9.1 – 9.7 9.8–9.12	**Sun 8/12**	**Sun 22/12**	**Mon 23/12**