Electrical Engineering Department

EE 202: Electric Circuits I
First Semester, 2014 – 2015 (151)

Instructor: Dr. Adil S. Balghonaim
Office :Room 1089 –Building 59
Tel: 8604753
Email: adil@kfupm.edu.sa

Office Hours: SU-TU-TH 11:00-11:50 AM

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.

Grading Policy (See footnotes):
***Class Work (HW, QZ, Attendances, Class Participation, etc) : 20%,**
****Exam I: 20%**
****Exams II: 25%**
Final (Comprehensive): 35%.

Absence Policy

- Only excuses obtained from the Students Affairs Dept. are accepted. Personal excuses are not accepted. Excuses must be submitted within a week from the absence time.
- **Every unexcused absence results in -1/2 from class work before averaging.**
- A grade of DN will be reported after the 9th unexcused absence.
- No make-up will be provided for quizzes or homework. If an official excuse exists, the student will be given the average of his marks.

Tentative Schedule			
Week		**Topic**	**Reading assignment**
1	23 Aug	Circuits Variables, Sources, Power and Energy	1.1-1.6, 2.1
2	30 Aug.	Ohm's Law, KCL, KVL, Dependent Sources	2.2-2.5
3	6 Sep.	Resistive Circuits, Nodal Analysis	3.1-3.4, 4.1
4	13 Sep.	Nodal Analysis (Continued), Mesh Analysis	4.2-4.5
Id al-Adha Vacation			
5	29 Sep.	Mesh Analysis, Source Transformation	4.6-4.9
First Major Exam: Wednesday 7 Oct. 2015, 6:00 – 7:30 PM			
6	4 Oct	Thevenin and Norton Equivalent Circuits	4.10-4.11
7	11 Oct	Maximum Power Transfer, Superposition	4.12-4.13
8	18 Oct	Inductors, Capacitors	6.1-6.3
9	25 Oct	First Order Circuits	7.1-7.3
10	1 Nov	First Order Circuits (Continued)	7.4-7.6
Second Major Exam: Sunday 8 Nov. 2015, 6:00 – 7:30 PM			
11	8 Nov	Second Order Circuits	8.1-8.2
12	15 Nov	Second Order Circuits (Continued)	8.3-8.4
13	22 Nov	Sinusoidal Response, Complex Numbers.	9.1-9.2, App. B.
14	29 Nov	Frequency Domain Analysis	9.3-9.5, 9.7
15	6-14 Dec	Frequency Domain Analysis (continued)	9.8, 9.9, 9.12
Final Exam: Comprehensive			