King Fahd University of Petroleum & Minerals
Electrical Engineering Department

EE 202: Electric Circuits I
First Semester, 2012 (121)

Instructor:
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Office Hours: S. M. W. 11:00 – 11:50 AM   Or by appointment

Course Content:
Basic laws: Ohm's, KVL, KCL. Resistive networks. Circuit analysis techniques: nodal and mesh analysis. Network theorems: Thevenin's, Norton's, source transformations, superposition, maximum power transfer. Energy storage elements. Phasor technique for steady-state sinusoidal response. Important power concepts of ac circuits. Transient analysis of first-order circuits.
Pre-requisite: MATH 102 and PHYS 102

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

Other Texts
Ref1: *Fundamentals of Electric Circuits,* Charles Alexander and Matthew Sadiku, McGraw Hill, 2004.
Ref2: *Engineering Circuit Analysis,* William Hayt and Jack Kemmerly, McGraw Hill, 2007.
Ref3: *Online Resources*, GOOGLE Search.

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) Use the techniques, skills, and modern engineering tools such as MULTISIM (Electronics workbench), necessary for engineering practice.
   4) To function on multi-disciplinary teams through the electric circuits experiments and projects.
   5) To design an electric system, components or process to meet desired needs within realistic constraints.

Grading Policy:

Class work 10%, Quizzes: 15%, Two Major Exams: 40%, Final: 35%.

Tentative Schedule			
Week		**Topic**	**Reading assignment**
1	1 Sept.	Circuits Variables, Sources, Power and Energy	1.1-1.6, 2.1
2	8 Sept.	Ohm's Law, KCL, KVL, Dependent Sources	2.2-2.5
3	15 Sept.	Resistive Circuits, Nodal Analysis	3.1-3.4, 4.1
4	22 Sept.	Nodal Analysis (Continued), Mesh Analysis	4.2-4.5
5	29 Sept.	Mesh Analysis, Source Transformation	4.6-4.9
First Major Exam: Wednesday 3 October 2012 evening			
6	6 Oct.	Thevenin and Norton Equivalent Circuits	4.10-4.11
7	13 Oct.	Maximum Power Transfer, Superposition	4.12-4.13, 5.1-5.2
EID AL-ADHA BREAK 18 October -2 November			
8	3 Nov.	Inductors, Capacitors	6.1-6.3
9	10 Nov.	First Order Circuits	7.1-7.3
10	17 Nov.	First Order Circuits (Continued)	7.4-7.7
Second Major Exam: Saturday 24 November 2012 evening			
11	24 Nov.	Second Order Circuits	8.1-8.2
12	1 Dec.	Second Order Circuits (Continued)	8.3-8.4
13	8 Dec.	Sinusoidal Response, Complex Numbers.	9.1-9.2, App. B.
14	15 Dec.	Frequency Domain Analysis	9.3-9.7
15	22 Dec.	Frequency Domain Analysis (continued)	9.8, 9.9, 9.12
16	29 Dec.	Review **Only Saturday 29 Dec**.	
Final Exam is comprehensive			
Homeworks are due on dates shown on the class website. No Late submissions will be accepted.			

Important Points to Remember:

1. **Practice Problems:** Practice problems are to be solved completely by the students. Solutions will not be collected but it will be posted on the class website**. No credit will be given to practice problems. Different assignments (not from textbook) will be given as homework which will make 5%.**

2. **Attendance:** According to the university regulations, any student that exceeds 20% (9 lectures) of the scheduled class meeting without an official excuse will receive a grade of DN in the course.

3. **Official Excuses**: All official excuses must be submitted to the instructor no later than one week of the date of the official excuse. The instructor may not accept late excuses.

4. **Course Lectures:** This class will use textbook class notes and you are supposed to READ YOUR BOOK. Some online lectures are available online through the *Open Courseware*. You are strongly encouraged to systematically review those online lectures to enhance your understanding of the course material.