PRINCE SATTAM BIN ABDULAZIZ UNIVERSITY
COLLEGE OF ENGINEERING AT WADI ADDAWASER

Teaching Plan

Course Number and Name	EE2020 Electric Circuit Analysis		
Contact Hours	3/week	**Credit Hours**	**3**
Prerequisites	none	**Semester & Year**	**5**
Required, Elective or Selective course:		R	
Instructor's/ Coordinators Name		Dr. Mukesh Kumar	

Course Description

Frequency response of RLC and resonance circuit: concept of transfer function, resonance, bode plots, introduction to filters; two-port networks; mutual inductance and transformers; transient analysis of first and second order circuits; three phase circuits; introduction to Op-Amp, ideal characteristics with simple applications; diode characteristics, clipping and rectification.

References

1. Electric circuits, Nilsson and Riedel, 2010, 9th Edition, Prentice Hall

Class Schedule

Lecture:	3 units	(3 hours X 15 weeks)
Tutorial:	1unit	(1 hours X 15weeks)
Laboratory:	0 unit	(0 hours X 15 weeks)

Course Outcomes

CO1	Ability to use inductors and capacitors in electrical circuits
CO2	Understanding of the concept of first order electrical circuits
CO3	Ability to solve the natural and step response of second order electrical circuit.
CO4	Understanding of AC circuits using phasor concept and their power calculations.
CO5	Design filters using R, L and C components.
CO6	Ability to use PSPICE/Simulation tool to analyze electrical circuits

Assessement Method

Assessment	CO1	CO2	CO3	CO4	CO5	CO6	Distribution
Quizzes	√		√		√		6 %
Assignments		√	√	√			6 %
Test 1	√	√					14 %
Test 2			√	√			14 %
Project						√	10%
Final Exam	√	√	√	√	√		50 %
Total							**100%**

RELATIONSHIP TO STUDENT OUTCOMES

		Program Outcomes										
No.	**Course Outcomes**	a	b	c	d	e	f	g	h	i	j	k
CO1	Ability to use inductors and capacitors in electrical circuits	√				√						
CO2	Understanding of the concept of first order electrical circuits	√				√						
CO3	Ability to solve the natural and step response of second order electrical circuit.	√				√						
CO4	Understanding of AC circuits using phasor concept and their power calculations.	√				√						
CO5	Design filters using R, L and C components	√		√		√						
CO6	Design and analysis of electrical circuits using PSPICE/Simulation tool	√		√		√						√
Course Outcome Analysis		√		√		√						√

Topics to be Covered

Week	Topics	Delivery	Assessment
1-2	Use of inductors, capacitors and their series and parallel combinations in circuits	L & T	Quiz-1 & Exam-1, Final Exam
3-6	Response of first order RL and RC circuits	L & T	Assignment-1, Test-1, Final Exam
7-9	Natural and Step response of RLC Circuits	L & T	Quiz-2, Assignment-2, Test-2, Final Exam
10-12	Sinosoidal steady state analysis and power calculations, Balanced three phase circuits.	L & T	Assignment-3, Test-2, Final Exam
13-14	Frequency Selective Circuits- Introduction	L & T	Quiz-3, Final Exam
-------	Ability to use PSPICE/Simulation tool to design and analyze electrical circuits	Project	Seminar, Short Report

L = Lecture, T = Tutorial

Prepared by:	Checked by:	Approved by:
Name: **Dr. Mukesh Kumar** Position: Assistant Professor Date: 09 December 2015	Name: **Dr. Omer Mohamed Abdalla** Position: Head, Electrical Engineering Program Date: 09 December 2015	Name: Dr. Mujahed Mohamed Position: Dean Date: 09 December 2015