Syllabus for EEE 201 Circuit Theory-I
2020 Fall Semester

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Lecture Hours: Monday (10:00-11:50), Thursday (11:00-11:50)

Course Objective

The goal of this course to develop an understanding of the elements of electric circuits and the fundamental laws, general techniques such as nodal and mesh analysis, Thevenin and Norton equivalent circuits used in analyzing electric circuits, and develop phasor techniques for AC steady state analysis of circuits. Study on energy storage elements will help students to understand the transient and the steady-state response of RLC circuits. The course also aims to introduce elementary electronic circuits such as operational amplifiers and their circuit models.

Course Learning Outcomes

Having successfully completed this course, students will be able to:
LO-1: Interpret the basic circuit concepts, such as voltage, current, power, energy, etc.
LO-2: Use node and mesh analyses methods for the analysis of linear time invariant circuits.
LO-3: Analyze circuits by utilizing Thevenin's and Norton's theorems.
LO-4: Analyze circuits with operational amplifiers.
LO-5: Interpret the operation of capacitors and inductors; and analyze both transient and steady-state response of first order circuits.
LO-6: Analyze second order circuits.
LO-7: Identify the concept of phasor; and apply it for the AC steady-state analysis of circuits.

Course Outline

Lumped circuits: Kirchoff`s laws, basic lumped elements, circuit graphs, circuit equations, linear and nonlinear resistive circuits, first and second order dynamic circuits. Introduction to operational amplifier circuits.

Tentative Schedule		
Weeks	**Topics**	**TextBook Reading**
1	Introduction to Electrical Circuits	Ch. 1
2	Resistive Circuits; Sources; measurement equipments	Ch. 2,3
3	Linearity; Nodal Analysis	Ch. 3,4
4	Nodal Analysis; Mesh Analysis	Ch.4
5	Mesh Analysis	Ch.4
6	Thevenin's and Norton's theorems;	Ch.4
7	Thevenin's and Norton's theorems; Power Transfer; Superposition	Ch.4
8	Op-Amps	Ch.5
9	Analysis of resistive Op-Amp circuits	Ch.5
10	Energy-Storage Elements	Ch. 6
11	First-Order Circuits	Ch. 7
12	First-Order Circuits	Ch. 7
13	Second-Order Circuits	Ch. 8
14	Second-Order Circuits	Ch.8
15	Sinusoidal Steady-State Analysis	Ch.9
16	Final Exam	(18 -31 January 2021)

Textbook(s)/References/Materials:
Textbook: Electric Circuits, Global Edition, 11th Edition, (Pearson) Susan Riedel, James W. Nilsson-2019

References: 1) Introductory Circuit Analysis, 13th ed., (Pearson) Boylestad, Robert L. 2) Fundamentals of Electric Circuits, (McGraw Hill) by Charles Alexander, Matthew Sadiku

Assessment Method	Overall Grade Percentage	Contribution to Course Learning Outcomes
Exam#1	%20	LO: 1…7
Exam #2	%20	LO: 1..7
Exam#3	%20	LO: 1..7
HWs	%15	LO: 1..7
Final Exam	%25	LO: 1..7