Description
Introduction to electrical elements, sources and interconnects. Ohm’s law, Kirchoff’s law, superposition and Thevenin’s theorems are introduced. The resistive circuit, OP Amp, RL, RC circuits, Sinusoidal analysis. Credit hours: 3 hrs.

Prerequisite(s): MATH 1720 Calculus II
Co-requisite(s): PHYS 2220/PHYS 2240 Electricity and Magnetism

Instructor
Miguel F. Acevedo, Regents Professor Electrical Engineering Department, Office DP B-260, Phone 940-891-6701, Email Miguel.Acevedo@unt.edu Office hours: T-Th 3-5 PM, or by appointment.

Teaching Assistant
Li Li, Graduate Student, Office DP B245 Office Hours M 10-12, W 2-4, Th 9-11

Format
- Lectures, based on textbook
- Online resources: Blackboard learn https://learn.unt.edu

Grade
Quizzes: 5%. We may have a quiz at the beginning, middle, or end of a class. It is your responsibility of being present during a quiz. The lowest score will be dropped when calculating your final grade.
Homework 20%: Weekly assignments. Your lowest homework score will also be dropped when calculating the final grade.
Two exams (25% each): Make-up exams will not be given except in extenuating circumstances.
Final Exam 25%: The final exam is comprehensive
Attendance: is required and will be monitored.

Schedules of exams
- Exam 1: October 4
- Exam 2: November 8
- Final: Designated final day: December 11, 10:30 a.m. - 12:30 p.m.
  http://essc.unt.edu/registrar/schedule/fall/final.html

Textbooks

Class Evaluation by Students
The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT and is available for your input at the end of the semester.

Topics
- Units and circuit elements, Chapter 1
• Resistive circuits, Chapter 2
• Nodal and loop analysis, Chapter 3
• Op-Amps, Chapter 4
• Theorems, Chapter 5
• Capacitors and Inductors, Chapter 6
• Transients, Chapter 7
• AC Steady State, Chapter 8
• Power Analysis, Chapter 9, sections 9.1-9.4
• Transformers, Chapter 10, sections 10.1-10.2
• Frequency analysis, Chapter 12, sections 12.1-12.5

Objectives
• Understand abstracted lumped circuit model, the attributes of circuit elements (including dependent/independent voltage/current sources, R, C, L, and Op-Amp), Ohm’s law, and Kirchhoff’s laws (KCL and KVL).
• Be fluent with the basic circuits (i.e., dividers, resistor combinations and transformations), and circuit analysis methods including KCL, KVL, nodal method, and loop method.
• Understand the reasoning of and be fluent with the analysis methods for linear DC and AC circuits, including linearity, superposition, Thevenin, Norton, Phasor method, Impedance method, and basic frequency domain analysis methods.
• Learn steady state power analysis, transformers, and the concepts of filters and resonance circuits.
• Gain understanding of basic concepts of systems, including linearity, state, initial condition, input, output, feedback, and basic linear systems analysis methods in time and frequency domains.
• Understanding of abstract models, and solving problems using engineering intuition.

Policies
Grades: All grades for the course will be final. No extra credit assignments or work will be considered after the final grade has been recorded.

Accommodations: The EE Department in cooperation with the Office of Disability Accommodation complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. Please present your written accommodation request before the 12th class day.

Academic Dishonesty: Students caught cheating, plagiarizing, or any other academic dishonesty will be subject to penalty according to the new Policy on Students Standards on Academic Integrity. See full policy at http://www.unt.edu/policy/UNT_Policy/volume3/18_1_16.pdf

According to this policy the categories of academic dishonesty are:

A. Cheating. The use of unauthorized assistance in an academic exercise, including but not limited to:
   a. use of any unauthorized assistance to take exams, tests, quizzes or other assessments;
b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments;

c. acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University;

d. dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor;

e. any other act designed to give a student an unfair advantage on an academic assignment.

B. Plagiarism. Use of another’s thoughts or words without proper attribution in any academic exercise, regardless of the student’s intent, including but not limited to:

a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation.

b. the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.

C. Forgery. Altering a score, grade or official academic university record or forging the signature of an instructor or other student.

D. Fabrication. Falsifying or inventing any information, data or research as part of an academic exercise.

E. Facilitating Academic Dishonesty. Helping or assisting another in the commission of academic dishonesty.

F. Sabotage. Acting to prevent others from completing their work or willfully disrupting the academic work of others.
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