Fall 2025 - Syllabus

EENG 3411 - Engineering Electromagnetics Lab

Class meetings B288, Monday 5:30 pm

Description

Electromagnetic Labs primarily revolves around practical lab experiments designed to reinforce theoretical concepts in electromagnetism. The course emphasizes hands-on activities, with students engaging in a variety of experiments to explore electromagnetic phenomena. Assessment is predominantly based on lab reports and performance during lab sessions, more focus on demonstrating practical understanding through projects and presentations. Credit hours: 1 hr.

Prerequisite(s): EENG 2610, MATH 3310.

Instructor

Sensong An, Assistant Professor, Electrical Engineering Department

Office E255A, Email Sensong.An@unt.edu, Office hours: by appointment.

Teaching Assistant

TBD

Format

- Lectures, based on textbook
- Online: announcements, grades via Blackboard learn https://learn.unt.edu

Grade

Lab Report: 100%

Grade distribution

A=90-100, B=80-89, C=70-79, D=60-69, F=0-59

Schedules of exams

N/A

Textbooks

Required: by Matthew Sadiku. Elements of Electromagnetics (The Oxford Series in Electrical and Computer Engineering) 7th Edition

Class Evaluation by Students

Student Perceptions of Teaching (SPOT) is a requirement for all organized classes at UNT and is available for your input at the end of the semester.

Topics

- Vector Algebra, Chapter 1, sections 1.1 – 1.7
- Coordinate Systems and Transformation, Chapter 2, sections 2.1 – 2.4
- Vector Calculus, Chapter 3, sections 3.1 – 3.7
- Electrostatic Fields, Chapter 4, sections 4.1 – 4.10
- Electric Fields in Material Space, Chapter 5, sections 5.1 – 5.9
- Electrostatic Boundary Value Problems, Chapter 6, sections 6.1 – 6.5
- Magnetostatic Fields, Chapter 7, sections 7.1 – 7.7
- Magnetic Forces, Materials, and Devices, Chapter 8, sections 8.1 – 8.10
- Maxwell's Equations, Chapter 9, sections 9.1-9.7

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:
  1. 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.
  2. Plagiarism. Use of another's thoughts or words without proper attribution in any academic
  3. Forgery. Altering a score, grade or official academic university record or forging the signature of an instructor or other student.
  4. Fabrication. Falsifying or inventing any information, data or research as part of an academic exercise.

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

Tentative Course Calendar

Week	Topics
1	No lab for 1st week
	No lab for 1st week
2	Lab 1: electromagnetic foundation
3	
4	Lab 2: Inductors and Transformers
5	
6	Lab 3: Paper Speaker
7	
8	Lab 4: Capacitive Sensor
	Mid-Term Exam
9	Spring Break
	Spring Break
10	Lab 5: DC Motor
11	
12	
	Lab 6: Magnetization and Demagnetization
13	
14	
	Lab 7: Final Project
15	
16	
17	
	Final Exam