

PHYS 1304 Fall 2014

Syllabus

Course Description

This course is as a calculus-based introduction to electromagnetism. Concepts of electric charge, field, and potential will be introduced, followed by a treatment of electric current, magnetism, and electromagnetic induction.

After discussing Maxwell's equations, light will be described as an electromagnetic wave. Important topics in the physics of light will be covered, including refraction, interference and diffraction. There will be an emphasis on in-class problem solving using similar techniques as required on homework and exams.

Instructor Formulated Student Learning Outcomes

It is expected that students should be able to incorporate physical concepts with mathematical techniques to solve problems in Electromagnetism and related topics.

General Education Student Learning Outcomes

Students demonstrate basic facility with the methods and approaches of scientific inquiry and problem-solving.

University Curriculum(UC) required student learning outcomes(SLO)

Upon the successful completion of the class:

1. Students will be able to demonstrate basic facility with methods and approaches of scientific inquiry and problem solving.
2. Students will be able to explain how the concepts and findings of science and technology in general, or in particular sciences or technologies, shape our world.
3. Students will be able to develop quantitative models appropriate to problems in Physics.
4. Students will be able to apply symbolic systems of representation.
5. Students will be able to formulate structured and logical arguments.

Attendance

To help the students get the most out of the lectures and encourage attendance, simple multiple choice Quizzes are administered at the beginning of each lecture. The questions are conceptual or very simple calculations.

Grading:

A	94.00-100.00
A-	89.00-94.00
B+	84.00-89.00
B	79.00-84.00
B-	74.00-79.00
C+	69.00-74.00
C	64.00-69.00
C-	60.00-64.00
D	50.00- 65.00
F	0.00 – 50.00

Disability Accommodations: Students needing academic accommodations for a disability must first be registered with Disability Accommodations & Success Strategies (DASS) to verify the disability and to establish eligibility for accommodations. Students may call 214-768-1470 or visit <http://www.smu.edu/alec/dass.asp> to begin the process. Once registered, students should then schedule an appointment with the professor to make appropriate arrangements.

Religious Observance: Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities: Students participating in an officially sanctioned, scheduled University extracurricular activity will be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue.

Week	Day	Topic
Week 1	M- Aug. 25	Introduction
	W- Aug. 27	Ch. 21- Electric charge
	F- Aug. 29	Ch. 21- Electric charge
Week 2	M- Sept. 1	Labor Day

	W- Sept. 3	Ch. 21- Electric charge
	F- Sept. 5	Ch. 21- Electric charge
Week 3	M – Sept. 8	Ch. 22 – Electric field
	W- Sept. 10	Ch.22. Electric field
	F – Sept. 12	Ch. 22 – Electric field
Week 4	M- Sept. 15	Ch. 23 – Gauss law
	W- Sept. 17	Ch. 23 – Gauss law
	F – Sept. 19	Ch. 23 – Gauss law
Week 5	M- Sept.22	Ch. 24 –Electric Potential
	W- Sept.24	Ch. 24 –Electric Potential
	F - Sept. 26	Ch. 24 –Electric Potential
Week 6	M – Sept. 29	Ch. 25 Capacitance
	W- Oct. 1	Review
	F – Oct. 3	Exam 1: Ch.21-26
Week 7	M- Oct . 6	Ch. 25 Capacitance
	W- Oct. 8	Ch. 25 Capacitance
	F – Oct. 10	Ch. 26 – Current and Resistance
Week 8	M- Oct. 13	Fall Break

	W- Oct. 15	Ch. 26 – Current and Resistance
	F – Oct. 17	Ch. 26 – Current and Resistance
Week 9	M- Oct. 20	Ch. 27- Circuits
	W- Oct. 22	Ch. 28 –Magnetic Field
	F – Oct. 24	Ch. 28 –Magnetic Field
Week 10	M- Oct. 27	Ch. 28 –Magnetic Field
	W- Oct. 29	Ch. 29 – Magnetic field due to currents
	F – Oct.31	Review
Week 11	M- Nov. 3	Exam 2: Ch 27-30
	W- Nov. 5	Ch. 29 – Magnetic field due to currents
	F – Nov. 7	Ch. 29 – Magnetic field due to currents
Week 12	M- Nov. 10	Ch. 30 – Induction and Inductance
	W- Nov. 12	Ch. 30 – Induction and Inductance
	F- Nov. 14	Ch. 31 – Alternating current
Week 13	M- Nov. 17	Ch. 31 – Alternating current
	W- Nov. 19	Ch. 33 – Electromagnetic waves
	F – Nov. 21	Ch. 34 - Images
Week 14	M- Nov. 24	Ch. 34 - Images

	W- Nov.25	Ch. 35 -Interference
	F – Nov. 27	Thanksgiving Holiday
Week 15	M- Dec.1	Ch. 35 -Interference
	W- Dec. 3	Ch. 36 - Diffraction
	F – Dec. 5	Ch. 36 - Diffraction
Week 16	M- Dec.8	Review
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Final exam- comprehensive		
SAT., DECEMBER 13 11:30 AM - 2:30 PM		