Introduction to Electricity and Magnetism

PHYS 1304/1404 (Fall 2006) Syllabus

http://www.physics.smu.edu/~kehoe/1304_F06

Instructor: Professor Bob Kehoe **Office:** Fondren Science 113
e-mail: kehoe@physics.smu.edu **Phone:** (214) 768-1793
Fax: (214) 768-4095

Texts: "*Physics for Scientists and Engineers*", Vol 2, 6th edition,
Authors: Serway & Jewett
Prerequisite: facility with algebra and trigonometry, limited use of calculus
Class Time: Mon, Wed & Fri 9:00a.m – 9:50a.m.
Classroom: Rm 158 Fondren Science
Office hours: 11am-1pm Monday, or by appointment

Course Objectives: To provide an overview of electromagnetism. Students will familiarize themselves with electrical, magnetic and optical phenomena. They will also study important electronics concepts. Modern applications will be discussed. Problem solving skill development will also be an emphasis of the class.

Method of Instruction: The class will consist primarily of lectures. Help sessions will be 2 hours per week scheduled and conducted by Rozmin Daya. Homework is the foundation of your effort to acquire skill in using the material in the course. It will be due at the end of each week and will be worth 5% of the course grade. Solutions will be posted on the course web-site.

Quizzes and Tests: There will be 3 primary tests during the semester, aside from the final exam. Tests will make up 45% of the class grade: 15% each for the exams. Each test covers material since the previous one. The final is cumulative over the whole course and counts for 25% of the grade. There will be weekly 15 minute quizzes during the semester scheduled at the end of each non-test week. These will provide a total of 25% of your grade. The lowest two quiz grades will be dropped. Each quiz covers material since the last test or quiz. Tests and quizzes are closed book. You may bring a single 8.5"x11" sheet with important formulas and constants relevant for the material on each test and quiz.

Grading and Attendance Policy: In general, it is crucial to show your work to get credit for solutions to homework, quiz or test problems. Regrading requests must be well-justified in writing, and as delineated on the course web-page. Anticipated absences resulting from religious observance or officially sanctioned extracurricular activity must be brought to the instructor's attention at least 2 weeks in advance. Affected quizzes or tests will be given prior to the rest of the class. No other make-up quizzes or tests will be granted. No late homework will be accepted.

Physics 1304/1404 Schedule, Fall 2006

Date	Topic	Problems:
Aug 18 F	Ch 23: Electric Fields	**7**, 8, 9, 14, **15**, 20, 30, 35, 42
Aug 25 F	HW1 due, Quiz #1	
Aug 28 M	Ch 24: Gauss's Law	1,4,**10**,11,19,23,28,34,35
Aug 31 F	HW2 due, Quiz #2	
Sep 4 M	Ch 25: Electric Potential	3,**6**,**18**,22,37,38,45,48
Sep 8 F	HW3 due, Quiz #3	
Sep 11 M	Ch 26: Capacitance	1,2,7,**16**,17,21,23,34
Sep 15 F	HW4 due, Test#1	
Sep 18 M	Ch 27: Current and Resistance	6,13,14,17,**21**,22,24
Sep 22 F	HW5 due, Quiz#4	
Sep 25 M	Ch 28: Direct Current Circuits	1,**6**,11,15,**21**,25,29,31,33,**36**
Sep 29 F	HW6 due, Quiz#5	
Oct 2 M	Ch 29: Magnetic Fields	1,**3**,8,**11**,13,21
	Ch 30: Magnetic Field Sources	**1**,7,16,**23**
Oct 6 F	HW7 due, Quiz#6	
Oct 9 M	* no class (Fall Break)	
Oct 13 F	Test#2	
Oct 16 M	Ch 31: Faraday's Law	1, 3, 5, 10,13,20
	Ch 32: Inductance	**1**,12,15,29,**48**,51
Oct 23 M	Ch 33: Alternating Currents	**2**,6,**8**,14,15,20,21,26,44
	HW8 due, Quiz#7	
Oct 30 M	Ch 34: Electromagnetic Waves	2,3,5,**11**,15,26,59
	HW9 due, Quiz#8	
Nov 1 W	* last drop date	
Nov 6 M	Ch 35: Optics	8,**10**,12,13,21,25,**36**
	HW10 due, Quiz#9	
Nov 10 F	Test#3	
Nov 13 M	Ch 36: Geometric Optics	3,**7**,11,21,28,30,**33**
	HW11 due	
Nov 20 M	Ch 37: Interference	**1**,2,7,30,32,37
	Ch 38: Diffraction, Polarization	4,11,20
	HW12 due, Quiz#10	
Nov 22 W	* no class (Thanksgiving)	
Nov 30 Th	HW13 due, Ch 40: Quantum Mechanics	Q:17-19, 21-23
Dec 8 F	Final Exam 11:30am-2:30pm	