INTRODUCTION TO ELECTRICITY AND MAGNETISM

PHYS 1304 (Spring 2016) Syllabus

http://www.physics.smu.edu/~kehoe/1304/S16.html

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Texts: "Fundamentals of Physics", 10th edition, Authors: Halliday & Resnick, Walker
Prerequisite: facility with algebra and trigonometry, use of calculus
Class Time: Tues. & Thurs. 11:00a.m – 12:20p.m.
Classroom: Rm 123 Fondren Science
Office hours: 3pm-5pm Tuesday, 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 Mondays 6pm-8pm & Wednesdays 5pm-6pm with Ryan Staten (<u>rstaten@smu.edu</u>) in Fondren Science Rm 123. Homework is the foundation of your effort to acquire skill in using the material in the course. It will be due on the Tuesday following the week the material is completed in the lecture and will be worth 20% of the course grade. No late homework is accepted.

Quizzes and Tests: There will be 1 mid-term exam and a final exam, comprising 20% and 30% of the class grade, respectively. The final is cumulative over the whole course. There will be weekly 15 minute quizzes during the semester scheduled at the start of each non-test week. These will provide a total of 30% of your grade. The lowest quiz grade will be dropped. Each quiz covers material since the last test or quiz. Exams and quizzes are closed book. You may bring a single 8.5"x11" sheet with important formulas and constants relevant for the material to be tested.

Grading and Attendance Policy: In general, it is **crucial** to show your work to get credit for solutions to homework, quiz or test problems. Exam and quiz regrading requests must be well-justified in writing. 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.

PHYSICS 1304 SCHEDULE, SPRING 2016

Date	Reading, Tests, Quizzes	Homework Problems Assigned:	
Jan 19 T	Ch 21+22: Electric Fields	Ch21: 2,3,6,10,26,40; Ch22: 6,8,16,17,22,23,25,36,39,50,56	
Jan 28 Th	Ch 23: Gauss's Law HW Ch21+22 due; Quiz #1	Ch23: 2-5,10,12,15,18,21,23,30,36,42,45,54,55	
Feb 4 Th	Ch 24: Electric Potential HW Ch23 due	Ch24: 2,3,7,8,12,19,22,24,60,64	
Feb 9 T	Ch 25: Capacitance HW Ch24 due; Quiz #2	Ch25: 2,5,6,12,16,22,33,34,42,52	
Feb 16 T	Ch 26: Current and Resistance Ch 27: Direct Current Circuits HW Ch25 due; Quiz #3	Ch26: 2,12,23,32,37,42,49 Ch27: 5,10,26,28,29,42,50,55,68	
Feb 23 T	Ch 28: Magnetic Fields Ch 29: Magnetic Field Sources HW Ch26-27 due; Quiz #4	Ch28: 3,4,7,8,10,14,25,27,34,44,46,53,63 Ch29: 1,2,16,27,31,46,48,53,54,63	
Mar 1 T Mar 3 Th	Ch 30: Inductance HW Ch28-29 due Mid-term Exam	Ch30: 1,2,4,6,10,12,27,35,39,42,49,56,60,64,71,76	
Mar 7-13	* no class (Spring Break)		
Mar 15 T	Ch 31: Alternating Currents HW Ch30 due	Ch31: 2,10,19,26,30,31,50,58,65	
Mar 22 T	Ch 32+33: Electromagnetic Waves HW Ch 31 due; Quiz #5	Ch32: 2,6,13,14,31,36,38,44,48 Ch33: 6,12,15,26,30,49,50,52,60,63,64	
Mar 29 T	Ch 34: Optics HW Ch32-33 due; Quiz #6	Ch34: 3,4,8,39,42,48,90	
Apr 6 W	*last drop date		
Apr 12 T	Ch 35: Interference HW Ch34 due; Quiz #7	Ch35: 2,4,6,11,12,18,21,24,30,34,54,78,79,82	
Apr 19 T	Ch 36: Diffraction HW Ch35 due; Quiz #8	Ch36: 5,8,11,16,19,26,32,39,50,54,62,72	
Nov 25 T	Ch 38: Quantum Mechanics HW Ch36 due; Quiz #9	Ch38: Xtra: 42,46,50,63,68,75	
May 2 M May 6 F	last day of classes Final Exam 8am-11am		