Introduction to Electricity and Magnetism

PHYS 1304 (FALL 2008) SYLLABUS http://www.physics.smu.edu/~kehoe/1304_08f.html

Instructor: Professor Bob Kehoe Office: Fondren Science 113

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Texts: "Physics for Scientists and Engineers", Vol 2, 7th (or 6th) edition,

Authors: Serway & Jewett

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 Wednesdays 4pm-6pm with Kamile Dindar (kdindar@physics.smu.edu). Homework is the foundation of your effort to acquire skill in using the material in the course. It will usually be due on the Tuesday following the week the material starts being covered and will be worth 5% of the course grade. No late homework is accepted. 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 start 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 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.

PHYSICS 1304 SCHEDULE, FALL 2008

Date	Reading, Tests, Quizzes	Homework Problems Assigned (7th ed.):
Aug 26 T	Ch 23: Electric Fields	7, 9,11-13,16,24,29,39
Sep 4 Th	Ch 24: Gauss's Law HW Ch23 due; Quiz #1	1,4,6,9,15,19,26,29,31
Sep 11 Th	Ch 25: Electric Potential HW Ch24 due; Quiz #2	1,3,12,16,29,30,37,40
Sep 16 T Sep 14 Th	Ch 26: Capacitance HW Ch25 due; Test #1 (Ch 23-25)	1,2,5,12,13,17-19
Sep 23 T	Ch 27: Current and Resistance Ch 28: Direct Current Circuits HW Ch26 due	5,11-13,15,23,27 1, 5,9,15,17,22,25,27,30,32
Sep 30 T	Ch 29: Magnetic Fields Ch 30: Magnetic Field Sources HW Ch27-28 due; Quiz #3	1, 3 ,7,25,27,38 1 ,10,18,24,25,39
Oct 7 T	Ch 31: Faraday's Law Ch 32: Inductance HW Ch29&30 due; Quiz #4	3,7,11,15,22,29,32,36,38 3,8,11,23,39,48,51,66
Oct 14 T Oct 16 Th	* no class (Fall Break) HW Ch31&32 due; Test #2 (Ch 27 Ch 33: Alternating Currents	-32) 2 ,3,8,12,13,18,19,24,40
Oct 21 T	Ch 33: Alternating Currents; Ch 34: Electromagnetic Waves	7-9,15,19,23,29,59
Oct 28 T	Ch 35: Optics HW Ch33&34 due; Quiz #5	8,9,11,12,19,24,33
Nov 4 T	Ch 36: Geometric Optics HW Ch35 due; Quiz #6	3,6,9,21,28,29,31-33
Nov 5 W	*last drop date	
Nov 11 T	HW Ch36 due; Test #3 (Ch 33-36) Ch 37: Interference	1,2,7,24,25,30
Nov 18 T	Ch 38: Diffraction, Polarization HW Ch37 due; Quiz #7	4,11,13,18,22
Nov 25 T	Ch 40: Quantum Mechanics HW Ch38 due; Quiz #8	Q: 14-16, 18,20; P: 50
Nov 27 Th	Thanksgiving Day, * no class	
Dec 4 T	HW40 due; last day of classes	
Dec 8 M	Final Exam 11:30am-2:30pm	

PHYSICS 1304 SCHEDULE, FALL 2008

Date	Reading, Tests, Quizzes	Homework Problems Assigned (6 th ed.):
Aug 26 T	Ch 23: Electric Fields	7 , 8, 9, 14, 15 , 20, 30, 35, 42
Sep 4 Th	Ch 24: Gauss's Law HW Ch 23 due; Quiz #1	1, 4 , 10 ,11,19,23,28,3 4 ,35
Sep 11 Th	Ch 25: Electric Potential HW Ch 24 due; Quiz #2	3, 6 ,1 8 ,22,37,38,45,48
Sep 16 T Sep 14 Th	Ch 26: Capacitance HW Ch25 due; Test #1 (Ch 23-25)	1,2,7,16,17,21,23,34
Sep 23 T	Ch 27: Current and Resistance Ch 28: Direct Current Circuits HW Ch26 due	6,13,14,17,21,22,24 1,6,11,15,21,25,29,31,33,36
Sep 30 T	Ch 29: Magnetic Fields Ch 30: Magnetic Field Sources HW Ch&28 due; Quiz #3	1, 3 ,8, 11 ,13,21 1 ,7,16, 23
Oct 7 T	Ch 31: Faraday's Law Ch 32: Inductance HW Ch29&30 due; Quiz #4	1, 3, 5, 10,13,20 1,12,15,29, 48 ,51
Oct 14 T Oct 16 Th	* no class (Fall Break) HW31&32 due; Test #2 (Ch 27-32 Ch 33: Alternating Currents) 2 ,6, 8 ,14,15,20,21,26,44
Oct 21 T	Ch 33: Alternating Currents; Ch 34: Electromagnetic Waves	2,3,5,11,15,26,59
Oct 28 T	Ch 35: Optics HW33&34 due; Quiz #5	8, 10 ,12,13,21,25, 36
Nov 4 T	Ch 36: Geometric Optics HW35 due; Quiz #6	3, 7 ,11,21,28,30, 33
Nov 5 W	*last drop date	
Nov 11 T	HW36 due; Test #3 (Ch 33-36) Ch 37: Interference	1,2,7,30,32,37
Nov 18 T	Ch 38: Diffraction, Polarization HW37 due; Quiz #7	4,11,20
Nov 25 T	Ch 40: Quantum Mechanics HW38 due; Quiz #8	Q:17-19, 21-23
Nov 27 Th	Thanksgiving Day, * no class	
Dec 4 T	HW40 due; last day of classes	
Dec 8 M	Final Exam 11:30am-2:30pm	

Relation of 6th and 7th edition problem numberings:

	7 th edition:	6 th edition:
Ch 23	7,9,12,16,24,29	7,9,15,20,30,35
Ch 25	1,3,12,16,29,30,37,40	3,6,18,22,37,38,45,48
Ch 26	1,2,5,12,13,17,18,19	1,2,7,16,17,21,24,23
Ch 27	5,12,13	6,13,17
Ch 28	1,5,9,15,17,22,25,27,32	1,6,11,15,21,25,29,31
Ch 29	1,25,27	1,11,13
Ch 30	1,18,25	1,16,23
Ch 31	3,7,11,15,22	3,5,10,13,20
Ch 32	8,11,40	12,15,51
Ch 33	2,12,13,18,19,24,40	2,14,15,20,21,26,44
Ch 34	7,8,9,15,19,59	2,3,5,11,15,59
Ch 35	9,11,12,19,24,33	10,13,12,21,25,36
Ch 36	3,6,9,21,28,29,31	3,7,11,21,28,30,33
Ch 37	1,2,7,24,25,30	1,2,7,30,32,37
Ch 38	4,11,18	4,11,20
Ch 40	Q14-16,18,20	Q 17-19,21,23