

Physics 212

Fall, 2006

Section 1, 1:00 - 1:50 PM (MWF)

Section 2, 2:00 - 2:50 PM (MWF)

109 Holt

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Office Hours: Tuesday, Wednesday and Friday 10-11 AM, and by appointment

Text: Randall D. Knight, Physics for Scientists and Engineers, First edition, (San Francisco: Addison Wesley, 2004).

Objective:

To give you a working understanding of electricity and magnetism, one of the most important studies in "classical physics" (the others being Mechanics, Thermodynamics, Optics, and Fluids). We will study fundamental concepts such as electric charge, field, potential, resistance, capacitance, inductance, direct current, alternating current, and electromagnetic waves. The problems and laboratories are designed to introduce you to these basic ideas and to help you apply them in new contexts. You should walk out of this course with a number of conceptual tools that are useful in many areas of science and engineering.

Grading:

Quizzes (about 10 total, drop one)	25%
Mid-term Exams (2 total)	30%
Final Exam (cumulative)	20%
Laboratory	15%
Classroom participation	10%

Exams: These consist of problems of two types: multiple-choice, for which no partial credit is given, and long-answer, which require you to show your work in order to get full credit or partial credit.

Quizzes: These are given for each chapter in the text. The quizzes consist of one or two long-answer questions, will take about 15 minutes. They are announced at least one class in advance. After the quizzes, we usually will start a new chapter.

It is possible to make up the exams if you inform me before the exam that you will be absent. To take the exam before or after the appointed day, you must have an "acceptable excuse" (e.g., a doctor's excuse, a death in the family, etc.). It is not possible to make up the quizzes. For every quiz over one missed, you will receive a zero grade, unless you have an "acceptable excuse," in which case your grade will be averaged for less quizzes.

Laboratory: You cannot make up the five laboratories so please do not miss any. If you miss one laboratory, I will give you partial credit. If you miss more than one laboratory, all of the missed labs after the first one will be given zero credit. (See lab syllabus.)

Classroom participation: This is mainly based on attendance and homework submission. Attendance will be taken with sign-in sheets that I pass around on random days. Students that do sample problems in the recitations and ask good questions will receive participation credit. Your participation grade includes your attendance and contributions to the recitation sections.

Homework: Assignments usually are collected on the day of the quiz for that chapter; the homework will be graded simply, on a “check-minus, check, check-plus” basis. Most of the quiz and exam questions are closely related to the homework assignments. Do not put off the homework assignments; for most people, practicing physics an hour every day is better than "cramming" in one or two evenings.

Academic Integrity:

At this point in your education, infractions of academic integrity should be obvious. Don't cheat during quizzes and exams by taking or accepting answers from other students or by sneaking in notes. If I find that you have cheated on a quiz or exam, then I will fail you for the assignment or for the entire course. I will not ask you to memorize equations and so it is a waste of time to type equations into the memory of your calculator. As with many forms of cheating, this takes as much time to accomplish as learning the material, which is more valuable to you in the long run. Ultimately, academic integrity is about not lying to yourself -- about how much effort you are putting forward and about how much you really are accomplishing.

Schedule:

Wednesday	Sept. 6	Electric Forces, Chapter 25
Friday	Sept. 8	
Monday	Sept. 11	Electric Field, Chapter 26
Wednesday	Sept. 13	
Friday	Sept. 15	
Monday	Sept. 18	Gauss' Law, Chapter 27
Wednesday	Sept. 20	
Friday	Sept. 22	
Monday	Sept. 25	Current and Conductivity, Chapter 28
Wednesday	Sept. 27	
Friday	Sept. 29	
Monday	Oct. 2	
Wednesday	Oct. 4	
Friday	Oct. 6 (no class)	

Monday	Oct. 9	Exam I
Wednesday	Oct. 11	The Electric Potential, Chapter 29
Friday	Oct. 13	
Monday	Oct. 16	
Wednesday	Oct. 18	Potential and Field, Chapter 30
Friday	Oct. 20	
Monday	Oct. 23	
Wednesday	Oct. 25	Fundamentals of Circuits, Chapter 31
Friday	Oct. 27	
Monday	Oct. 30	
Wednesday	Nov. 1	Magnetic Field, Chapter 32
Friday	Nov. 3	
Monday	Nov. 6	
Wednesday	Nov. 8	
Friday	Nov. 10	Electromagnetic Induction, Chapter 33
Monday	Nov. 13	
Wednesday	Nov. 15	
Friday	Nov. 17	
Monday	Nov. 20	
Tuesday	Nov. 21	(Friday schedule) Exam II
Wednesday	Nov. 22	(no class)
Friday	Nov. 24	(no class)
Monday	Nov. 27	
Wednesday	Nov. 29	Electromagnetic Waves, Chapter 34
Friday	Dec. 4	
Monday	Dec. 6	
Wednesday	Dec. 8	Alternating Current, Chapter 35
Friday	Dec. 10	
Monday	Dec. 11	
Wednesday	Dec. 13	
Friday	Dec. 15	

Final Exam

PHYS 212L.001	12/18/2006	0100P - 0250P	109 HOLT
PHYS 212L.002	12/19/2006	0100P - 0250P	109 HOLT

Physics 212 Laboratory and Recitation

Fall, 2006

Thursday, 10:00-11:50, 1:15-3:05, and 3:15-5:05

210 Holt

Brock Weiss, 130 Misciagna Family Center for Performing Arts

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Objectives: To demonstrate the physical concepts discussed in the lectures, to acquaint you with simple techniques involved in experimental work, and to review homework problems.

Grading: To receive a good grade, your laboratories should include three things (when applicable): neat data tables; sample calculations; and a concise conclusion (when required) that restates the purpose of the laboratory and discusses the experimental results. It is best to hand in the lab at the end of the two-hour period. If you would like more time, the labs are due the week following the original lab date. Labs that are handed in after that time will be given lower grades.

If you miss one of the laboratory experiments, then I will give you partial credit. If you miss more than one laboratory, all of the additional missed laboratories will be given zero credit.

Schedule:

Sept. 7	Recitation
Sept. 14	<u>Coulomb's Law</u> (Chapter 25)
Sept. 21	Recitation
Sept. 28	Recitation
Oct. 5	<u>IV Characteristics</u> (Chapter 28)
Oct. 12	Recitation
Oct. 19	Recitation
Oct. 26	<u>Capacitor</u> (Chapter 30)
Nov. 2	Recitation
Nov. 9	<u>Magnetic Force</u> (Chapter 32)
Nov. 16	Recitation
Nov. 30	Recitation
Dec. 9	<u>RLC Circuit</u> (Chapter 35)
Dec. 14	Recitation