

PHYSICS 231

FUNDAMENTALS OF PHYSICS: ELECTRICITY AND MAGNETISM

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General Information

Class Hours: 9:05 – 9:55 Monday/ Wednesday

Office Hours: 10:00 – 11:00 Monday/Wednesday and by appointment

Text: Young & Freedman, *University Physics*, 12th Edition with Modern Physics. ISBN: 0-8053-2187-X.

General Course Description

The course is intended to provide a foundation in electricity and magnetism as well as an introduction to DC and AC circuits. The course will cover most of chapters 21-31 of the text.

Prerequisites

The course and text presume a familiarity with calculus and calculus concepts. A background in mathematics up to the level of Math 141-142, or equivalent, is highly recommended and is probably necessary for success in the course

Communication

My primary forms of communication with students are during lecture sessions and through blackboard. Questions related to the course should be posted on the discussion board forums on blackboard. In this way other students can participate in the discussions. However, personal issues that may arise during the course should be directed to me through email, or discussed with me in person.

Reading Assignments

Reading the relevant chapter or sections for each week's lectures is a compulsory and vital part of the course. There will be reading tests prior to each chapter.

Course Philosophy

This course will run in a slightly different way to standard physics classes and you should be aware of this from the beginning. It is **absolutely essential** to read the relevant chapter in the textbook **before** coming to class. A short reading test will need to be completed **before** each new chapter is approached in the lecture session. **Not all the material contained in the course will be covered in the lecture sessions, however, any of it may be tested via homework assignments or exams. Similarly, material may be covered in lectures that cannot be found in the text, and again this may be tested.**

Schedule

THE SCHEDULE BELOW IS TENTATIVE

DATES FOR EXAMS ARE PROVISIONAL AND ARE SUBJECT TO CHANGES ANNOUNCED IN CLASS AND ON ONLINE@UT

<u>Week of</u>	<u>Reading/Lectures</u>	<u>Subject Material</u>
5 Jan	(Chapter 21)	Introduction
12 Jan	Chapter 21 (cont.)	Electric charge/fields
19 Jan	Chapter 22	Gauss's Law
26 Jan	Chapter 22 + 23	Gauss + Electric Potential
2 Feb	Chapter 24	Capacitors + dielectrics
9 Feb	Chapter 25	Current, EMF, Resistance
16 Feb	Chapter 25 + 26	Current, EMF, Resistance + DC
23 Feb	Chapter 26	DC Circuits
2 Mar	Chapter 27	Magnetic Fields
9 Mar	REVIEW + MID-TERM EXAM	
16 Mar	<i>Spring Break</i>	
23 Mar	Chapter 28	Sources of Magnetic Fields
30 Mar	Chapter 28 (cont.)	Sources of Magnetic Fields
6 Apr	Chapter 29	Electromagnetic Induction
13 Apr	Chapter 30 + 31	Induction + AC Circuits
20 Apr	Chapter 31	AC Circuits + REVIEW

Please consult the official UT final exam schedule for the date of the final examination

ACADEMIC HONESTY

All work submitted by a student is expected to represent their own work. Students are expected to enter their own homework on the CAPA system without assistance from others. Students are expected to perform all work in conformance with the University policies regarding Academic Honesty.

Grading Policy

The semester Grade will be based on a Weighted Averages of the mid-term exam grades, final exam grades, as well as laboratory scores, and homework scores.

Homework will comprise 15% of the final semester Grade

Homework sets will be assigned On-Line using the WebAssign software system (<http://www.webassign.net>). You will need to purchase an access code for WebAssign (approx \$16). **Due dates for problem sets are firm.** In lieu of extensions, the two lowest scores on homework sets will be dropped from the average. You can log in to WebAssign through blackboard.

Reading tests are included in the homework grade (20%). Reading tests comprise of three short questions and will be posted on blackboard.

NO EXTENSIONS OR MAKE-UP PROBLEM SETS WILL BE GIVEN

Laboratory Scores will comprise 25% of the final semester Grade.

While laboratory work will be graded by each Lab Instructor independently, an effort will be made to insure a uniform grading policy between different laboratory sections. Laboratory make-ups are entirely at the lab instructor's discretion and arrangements for such must be made with the lab instructor.

Mid-term test & Final Exam will comprise 60% of the final semester Grade

There will be one Mid-Term test and one Final Exam. The total Exam Grade will be a weighted average of the Mid-Term Test and the Final Exam with the Final being equivalent of two Mid-Term Tests.

The preliminary date for the mid-term test is March 11 2009, during normal class time. If you cannot make this date, contact me **at least two weeks before the date!**

IMPORTANT NOTE: Questions on the MID-TERM Test and Final will generally *NOT* require only a purely numerical answers (like the homework). Mid-term and Final exam questions will generally have a number of parts; numerical, factual and conceptual. *The mid-term and final exams will be closed book*, but a list of useful equations will be provided.

If, for any reason, there is a concern about a grade given on an exam or exam question, an appeal will be entertained if it is raised **no later than one week** after the date on which the graded exams are made available for return to the class. After this “appeal period” of one week, exam grades will be considered final and will not be altered.

MISSING THE FINAL EXAM IS VERY SERIOUS AND MAY WELL RESULT IN FAILURE OF THE COURSE

Grading Scale

Final Grades are determined from the weighted average, where the weights are:

Homework	15% (20% of which comes from reading tests)
Labs	25%
Exams	60%

See discussion above for full explanation, especially regarding missed homeworks and tests.

The final grade will be assigned from the weighted average based on the following *provisional* grading scale.

A	80 and above
A-	77 and above
B+	73 and above
B	70 and above
B-	67 and above
C+	63 and above
C	60 and above
C-	57 and above
D+	53 and above
D	50 and above
D-	47 and above
F	below 47

Please note that this grading scale gives a 10% advantage over that used by most professors, hence, **YOU SHOULD NOT EXPECT FURTHER CURVING OF GRADES**

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Disability Services at 865-974-6087 in Hoskins Library to coordinate reasonable accommodations for students with documented disabilities.