
Syllabus for PHYSICS 272

Teusday/Thursday 10:30-11:45am Fall 2009, Professor Peter Gorham

COURSE CONTENT	Physics 272 is an introductory level, calculus-based, undergraduate physics course intended primarily for science and engineering majors. This is the second of three courses; the material this semester covers classical electricity & magnetism, electromagnetic waves, and some relativity.
TEXT	<p>Sears & Zemansky's "UNIVERSITY PHYSICS," vol. 2 (12th edition), H. D. Young & R. A. Freedman, Pearson/Addison Wesley. New books should include a Mastering Physics online registration packet.</p> <p>Note that the text is the meat of the course. If you wish to do well in this course, be prepared to spend a lot of time with the text, working out many if not most of the examples, and spending extra time doing unassigned problems.</p> <p>Physics is a discipline, like competitive sports, or playing a musical instrument. If you want to excel, you must put in the time to practice and perfect your problem-solving skills. The lectures cannot help you do that. "No pain no gain" applies here as well as it does in any discipline. The reward here is that skill in physics will sharpen your mental acuity, and that will extend to every other sphere of your scientific inquiry.</p>
PREREQUISITES	UH Physics 151/151L or 170/170L and Math 242, or equivalent.
TIME & PLACE	10:30am to 11:45 am Teusdays & Thursdays in 112 Watanabe Hall, Manoa Campus.
CLASSROOM PROTOCOL	<p>Lectures will involve material from the book, with specific examples selected because they are similar to your homework or midterm problems. So those attending lectures will have a definite advantage on the assignments and tests.</p> <p>Questions are also welcomed. If you did not understand something, chances are that others did not as well. Feel free to call out "question" if I do not see your hand or am not facing you.</p> <p><i>Please turn off your cell phones before class--I retain the right to answer any cell phone that rings in my class!</i></p>
OFFICE HOURS	11:45am-12:15pm after class on lecture days, or by appointment. You may stop by my office WAT 324 at any time but without an appointment I may not be able to see you.
PROBLEM SETS:	A set of problems will be assigned each week using the Mastering Physics online homework system, as there are no funds this year for graders due to the severe economic problems in Hawaii and elsewhere. You must use this system to get homework credit! These assignments will be due prior to class about 1 week later unless specified otherwise, and the due dates are clearly indicated in the online system. Late homework will lose 50% of the credit per day late. If you purchased a used book you can still register for the online course at www.masteringphysics.com with a credit card.

Mastering Physics requires use of an internet-linked computer, and it will often require several hours to complete the assignments. There is a 2% tolerance on numerical answers. Your computer will require that Adobe flash player is installed to complete many of the problems that require symbolic input. Note that the symbolic input takes some practice--and can be a bit fussy about the order, about superscripts and subscripts, or any random spaces, etc. in your answer.

**MASTERING PHYSICS COURSE ID (needed to log in):
PHYS272GORHAMFALL09**

**COURSE
NOTEBOOKS:**

To complete the Mastering Physics assignments, you will need to purchase and use an additional course notebook, independent of your notebook for the (separate) laboratory course. This course notebook will become the record of your work on the computer or offline. To complete each assignment you will in most cases need to work out some of the math and physics on "scratch" paper -- for this course you will not use scratch paper, but rather your course notebook, and you **must** initial and date each entry, providing a legal record that you did the work yourself. The notebook **must** be a bound, covered laboratory-type book rather than a looseleaf binder, and it should be numbered (or you can number the pages yourself). I will collect these occasionally to check your work. **Looseleaf or ring binders will not be graded.** Composition books are not encouraged; you will find the ruling too course, unless it is ruled as graph paper, and you will end up needing more than one book for the semester.

Your course notebook should not be used for class lecture notes, as you will run out of space later in the semester. Rather your course notebook should include all of the written scratch work needed to complete each homework (or in some cases midterm) problem, even if a portion of it is incorrect. If you start off wrong, just cross it out with one line, and go on to the next solution attempt, recording the entire process in your notebook.

**STUDENT
LEARNING
OUTCOMES**

- Students can solve complex problems in Electromagnetism using calculus-based skills
- Students can apply their understanding of Electromagnetic phenomena in the course to experiences outside the classroom, specifically the use and behavior of technology based on electromagnetic principles

MIDTERMS

There will be **three midterm exams**. If they are in-class, each will take one whole lecture period. If they are take-home, they will involve somewhat more detail or scope as appropriate, and will require use of the course notebook to record your supporting work as described above. You must take **all** mid-terms. They will consist of problems similar to those occurring on the problem sets. If you do all the homework problems you will be able to do the midterm problems, but additional practice from the end-of-chapter HW problems is strongly encouraged.

Occasionally students may be unable to take a midterm for various reasons. If you notify the instructor at least 24 hrs before the exam with a good reason (your's or your family's illness, or jury duty, or some other issue that you can substantiate), there will be no penalty. Otherwise you will be penalized 25% of the total, that is, your graded score will be multiplied by 0.75 before the grade is assigned.

FINAL

Thursday Dec. 17, 9:45-11:45AM, WAT 112. Will be 60% cumulative, 40% on the

last few lectures after the last midterm

GRADING

Midterms 50% total (each of the three is worth ~16.7% of your grade)

Final 30%

HW Problems 20% (including a TBD portion for your course notebook)

Grades are assigned as follows, on a **fixed scale** (no curve!):

A+	A	A-	B+	B	B-	C+	C	C-	D	F
100%	>=92%	90% to <92%	88% to <90%	80% to <88%	75% to <80%	72% to <75%	62% to <72%	60% to <62%	50% to <60%	<50%

WWW

<http://www.phys.hawaii.edu/~gorham/p272/>

INSTRUCTOR

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GRADER

As noted above there is no grader this year due to state budget cuts!

Last modified: 8/25/2009 PG
