

Electricity and Magnetism

Physics 325 • Fall 2009

Instructor: Doug Juers Office: Sci 244
Hours: M-Th 10-11, by appointment, or if my office door is open.
Course Meeting: TWTh 9:00-9:50 Room 146.

Texts: *Introduction to Electrodynamics*, 3rd ed., David J. Griffiths (required)
Div, Grad, Curl & All That, H.M. Schey (optional)

Course Content

We will cover, at a minimum, vector calculus, electric and magnetic fields in vacuum, electromagnetic induction and Maxwell's equations. This is Chapters 1-3,5 & 7 in Griffiths. We may be able to move faster than this, in which case we'll include other topics from Griffiths.

Problem Sets and the Text

I'll assign reading from the Griffiths text, which you should do before we discuss the material. This text is excellent and you'll learn a lot by reading it. The Schey text is optional, but is a very good resource to improve your understanding of vector calculus. You probably can find it online for considerably less than the price in the bookstore.

I will post reading assignments, problem sets, solutions, grades and any other material on CLEo. Problem sets will be due on Thursdays at 5 pm in the boxes outside the Physics Department offices. Late problems will not be accepted unless arrangements are made before the due day. You may discuss the problems with each other – this is a great way to learn the material. However, the solution you hand in should be your own. In other words, discuss things together if you'd like, but then go away and write it up yourself.

Mini-Oral Exams

Throughout the semester, each student will give two 10-minute mini-oral exams on material we have already covered in class. This is designed to mimic the actual oral exam that is part of the physics major. It will count as one problem set and will occur during the second half of class on Thursdays. For each exam, I will give you a day or two notice in class.

The grade on the mini-oral will be based on the following:

1. Effectiveness of presentation. (Speaking loudly, making eye contact with the class, organized writing on the board.)
2. Correctness of the physics.

Exams

There will be two midterms and a final. Dates for the midterms will be announced a week or two in advance.

Grading

40%/30%/30% Problem Sets/Midterms/Final