

Physics 110A

Electricity and Magnetism

Instructor: Peter Young

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Place: Physical Sciences 114.

Time: Tuesdays and Thursdays, 2:00–3:45.

Note: Course materials, such as homework assignments and handouts, will be available at my web site

<http://physics.ucsc.edu/~peter/110A/>

Typed up solutions to the homeworks will also be posted on this site after they are due.

Books

The recommended book for the course is

- *Introduction to Electrodynamics* by D. J. Griffiths. In my view this is an excellent book. Griffiths writes well, in an informal style, and explains the concepts in an intuitive way. We shall cover chapters 1–7, and so get as far as Maxwell's equations which give a *complete* description of electromagnetism. The rest of the book will be covered in Physics 110B.

Other books, which are on reserve on the library, are

- *Electromagnetism* by G. L. Pollack and D. R. Stump.
- *Electromagnetic Fields and Waves* by P. Lorain, D. P. Corson and F. Lorain
- *Foundations of Electromagnetic Theory* by Rietz, Milford and Christie.

You will need a good understanding of vector calculus. We shall review this at the start of the course, following Griffiths Ch. 1 which gives a good concise treatment. Other treatments of vector calculus are in

- *Mathematical Methods in the Physical Sciences* by M. Boas. This is the book used for the 116 series, so you probably have a copy.
- *Div, Grad, Curl, and All That* by H. M. Schey.

Grading

Your performance in the class will be decided on the basis of the midterm, final and homework assignments as follows:

midterm	25%
final	50%
homework	25%

The midterm and final exams will be closed book. You will be allowed to bring one sheet of notes written by yourself (no photocopies) if you wish.

Final Exam

The final exam will be in class, Thursday, March 19 7:30–10:30 pm.

Homework

A weekly homework assignment will be handed out each Tuesday and due one week later. It is very important to work hard on the homework problems. You don't really understand a topic until you are able to solve problems in it. The way to learn how to solve problems is through *practice*. You are encouraged to discuss the homework problems with other students. You are also encouraged to attend the discussion section and office hours for additional help, either with problems or bookwork.

Discussion Section

The TA is Scott Medling, e-mail: medling@physics.ucsc.edu. The discussion section will be on Mondays, 5:30–7:30 pm, in ISB 235.

Office Hours

The times of my office and that of the TA will be decided at the first class.