

## **PHYS 323**

### **Electromagnetism III - Electrodynamics**

#### **Study sessions:**

These are completely informal meetings of the 32x students where you can work on the course material in study groups, or alone, as you like. They will take place on Wednesday evenings between 5.30 and 9 pm in B109. The professor and TAs will be there part of the time.

#### **Texts:**

The primary text is "Introduction to Electrodynamics," by David J. Griffiths, (Prentice Hall, 1999). However, some material will be covered that isn't in this book and you will need to refer to at least one other textbook. Find a supplementary textbook you like. One that is up to date and a bit more advanced is "Electromagnetism" by Pollack and Stump ('P&S'), (Addison Wesley, 2002, ISBN 0-8053-8567-3). It is complementary in its approach, plus it has a more orthodox style. However there are many other good E&M textbooks which you could use instead.

#### **Homework:**

Assigned weekly by posting on the web. Must be handed in in-class on the due day.

#### **Bonus questions:**

Sometimes optional bonus questions of extra difficulty will be posted. See homework page for more details.

#### **Exams:**

Exams are closed book, closed notes, and no calculators! There are two one-hour midterms and one two-hour final. The dates and times are given on the schedule page and practice papers on the exams page.

#### **Final grade:**

The course grade will be obtained from the sum  $S$  of the normalized scores on 4 units of the exams and homework:

$$S = \text{Midterm1 (1 unit)} + \text{Midterm2 (1 unit)} + \text{final (2 units)} + \text{homework (1 unit)} - (\text{worst unit})$$

This equation says that one midterm, half the final exam, or the homework, will not count, depending on which you score worst on compared with the rest of the class.

#### **Web pages:**

Keep an eye on the course web site. Announcements, homework, new resources, and surveys will be posted there frequently, and the class schedule will be continually updated.

**Goals of the course:**

The student should gain understanding of electrostatics and be able to obtain electric fields for various configurations of charges and boundary conditions. The student should gain an understanding of electric fields in dielectric media. Heavy emphasis will be placed on problem solving, and mathematical methods learned in previous math and physics courses will be employed. Successful completion of the course should result in a student gaining a professional ability to solve a wide variety of technical problems involving partial differential equations. Some modern physics topics within the context of E&M will also be discussed.