



PHYS 604

Classical Electrodynamics I

Tue/Thu 11.00am – 12.15am, OCNPS 303

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OCNPS 325

**Course Description:**

Graduate level survey of static situations in electrodynamics, including rigorous theoretical development.

**Recommended Texts:**

*Classical Electrodynamics*, J.D. Jackson

The classic graduate level textbook, be prepared for a steep learning curve.

*Modern Electrodynamics*, A. Zangwill

A newer text, much more explanation than Jackson, but many more pages.

You should make sure you have access to at least one of these books.

**Topics to be covered:**

Electrostatics: Gauss' Law and Poisson and Laplace equations. Methods for the solution of boundary-value problems with rectangular, cylindrical, and spherical symmetry. Expansion in multipoles. Dielectrics. Magnetostatics and Faraday's law.

**Grading (approximately):**

Homework assignments & tutorial participation	30%
Midterm exam	30%
Final exam	40%

## Course Policies:

- **Homework:**

Homework is designed as a learning aid. You should attempt to solve the problems individually before asking for help either from your colleagues or ideally from me. Duplicating material from anyone else's solutions (including solutions found on the internet) is **cheating** and will be punished.

Homework will be set on an approximately weekly basis, with deadlines that will be announced as the semester progresses. There will be no extensions to homework deadlines except in exceptional circumstances – in such cases you should contact me as soon as you are aware that you will not complete the homework on time.

$A$  = very good,  $A-$  = good,

Homework will be graded on a letter scale:  $B+$  = reasonable,  $B$  = acceptable,

$B-$  = unacceptable,  $C+$  = failing.

- **Lecture and Tutorial Attendance:**

Lecture attendance is not compulsory, however **you** are responsible for ensuring that you have a working knowledge of all the material to be covered in the course of the semester.

Tutorial sessions will be held (schedule to be determined early in the semester) in which the most recent homework will be discussed. In some cases I will describe solutions and in others I will call upon students to describe their solutions on the board. Attendance and participation is **for credit**. In the tutorial sessions you may be called upon to describe your solution to a problem on the board so be sure that you understand everything you hand in as a solution.

- **Getting Help:**

I am available any time you can find me in my office on Tuesdays and Thursdays. Simple questions may be asked by email at any time.

- **Exams:**

There will be a single midterm exam and a final exam (schedule TBA). The exams will be “closed-book”, but a basic formula sheet will be provided.

- **Academic Honesty:**

You are expected to uphold the highest standards of scientific integrity at all times as well as abiding by the Honor Code. If you are ever uncertain about what is or is not allowed, you should contact me.