

A&EP 355—Intermediate Electrodynamics
Fall 2004

Professor: Chris Xu
276 Clark Hall
255-1460
cx10@cornell.edu

TA: Adam Bartnik
213 Clark Hall
acb20@cornell.edu

Lecture: MWF 9:05-9:55 AM
Space Science 105

Section: Wed. 1:25-2:15 PM
Rockefeller 128

My office hours are: Monday and Friday 10:00-11:00 AM and Wednesday 11:00-12:00 AM. If you wish to speak to me at other times, please call Ms. Renee King at 255-5198. TA office hours will be determined during the first recitation section.

Examinations and Grades

There will be one closed-book preliminary examinations and a standard two and one-half hour closed-book final examination. The preliminary exams will be given during an **extended** recitation section on **Wednesday Oct. 20, 2004, 1:20 to 2:50 pm.** The final exam will be held on **Wednesday, Dec 15, 2004, from 9:00-11:30 a.m.** Please reserve these dates and contact me immediately if you have a conflict. It is Cornell University policy that *“Students requiring a make-up exam for any reason must speak to the faculty member(s) involved before registering for the course.”*

The preliminary exam will be worth 30% of the semester grade. The final exam will be worth 40% of the grade.

Problem Sets

There will be approximately 10 problem sets during the semester. 30% of the course grade will be based on homework. Problem sets are due at the end of class on Monday. Late problem sets will not be accepted; however, one assignment may be missed totally without penalty. Students are encouraged to work together on problem sets; however, **each student must hand in an independent write-up.**

Text Book

Required: David J. Griffith “Introduction to Electromagnetics” (Third Edition, 1999, Prentice Hall).

Optional: John David Jackson, "Classical Electrodynamics", 3rd Edition.

Please turn off your cell phones in the class!

AEP 355 Course Description

Vector analysis

Electrostatics

Electrostatics in conductors and dielectrics

Work and energy in an electric field

Boundary conditions

Image charge

Mid-term Exam

Laplace equation

Multipole expansion

Lorentz force

Magnetostatics

Magnetostatics in matter

Faraday's law and induction

Work and energy in a magnetic field

Maxwell equations

Final Exam