SYLLABUS for Fall 2013 PHYS-UA 131 Electricity and Magnetism I

Lecture : M,W  11:00 AM – 12:15PM  Room 102 Meyer Hall
Recitation: T  3:30 PM – 4:45 PM  Room 333 Meyer Hall

Prof. Allen Mincer    708 Meyer Hall    212-998-7707    allen.mincer@nyu.edu
Office hours: by appointment

Aaron Yevick    723C Meyer Hall    ay589@nyu.edu    Office hour: TBD

COURSE DESCRIPTION:

Electromagnetism is the basis of just about all of modern technology. The quantum mechanical version of the theory has been tested to about 11 decimal places. The mathematical techniques used to describe electromagnetism can be applied to a broad variety of physical problems. The properties of fields and the mathematical techniques used to describe them underlie our current understanding of the fundamental forces of nature. You should learn this stuff!

This course will cover electrostatics and magnetostatics in vacuum and in media, electrodynamics, waves, and relativity. Depth of coverage will vary and additional topics may be included as time permits.

PREREQUISITES: Classical & Quantum Waves and Mathematical Physics.


A few words about homework, collaboration, and the book:
Having made it this far in your education, you would undoubtedly soon discover on your own, if you have not already, that the solutions manual to the 3d edition of this book is available on the web. Like working with classmates, this can be a terrific tool if used wisely, but will sabotage your chances of learning anything (or of succeeding in this course) if abused.

Best practices for homework: I suggest that you spend at least about an hour on any problem (preferably distributed over at least two separate occasions) before deciding that you cannot solve it. At that point it may be useful to discuss it with a classmate or look at the solutions manual to get a hint on how to proceed. Consulting the manual AFTER you have worked the problem to see if you have obtained the correct answer can also be helpful.

Finally, start doing your homework early; waiting until the last minute will not work in this course. Spending lots of time wrestling with many problems is the only way to learn this material.

COURSE GRADING:

•  Homework (dropping 2 lowest scores) - 40%
•  Recitation attendance and participation – 10%
•  Midterm exam - 15%
•  Final - 15%
•  Better of the midterm exam grade and the final exam grade - 20%

The mapping of numerical scores into letter grades will be determined later in the semester.