

Physics 416

Electromagnetic Theory 2 - Spring 2008

Instructor: Neepa Maitra

Location: Room 1311 HN

Lecture Times: Tu and Th: 2.45pm – 4.00pm

email: nmaitra@hunter.cuny.edu

phone: 212-650-3518

office: 1214E HN

Note: email is the best way to reach me

Office hours: Tu and Th: 2pm – 2.40pm, or by appointment.

Text: *Introduction to Electrodynamics*, by David J. Griffiths (3rd Ed), (Prentice-Hall 1999).

Grading:

Homework 25%

Midterm Exams 40%

Final Exam 35%

Homework: Will be assigned about every two weeks, and due about a week later. Collaboration with your peers is encouraged, but independent solutions must be handed in for credit. Homeworks will be posted here.

Midterms: Two mid-term in-class exams: Tu Mar 11 and Tu Apr 15 (Probably).

Final Exam: TBA.

Syllabus: on reverse side

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Neepa Maitra, Assistant Professor, Department of Physics and Astronomy, Hunter College and City University of New York, August 2007.

Syllabus:

Topic

Book chapter

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| Electrodynamics | 7 |
| Electromotive force, electromagnetic induction, Maxwell's equations | |
| Conservation Laws | 8 |
| Charge and energy, momentum | |
| Electromagnetic Waves | 9 |
| Waves in vacuum, waves in matter, absorption and dispersion, wave guides | |
| Potentials and Fields | 10 |
| Scalar and vector potentials, gauges, continuous distributions, moving point charges | |
| Radiation | 11 |
| Dipole radiation, radiation of a point charge | |
| Electrodynamics and Relativity | 12 |
| Special relativity, relativistic mechanics, relativistic electrodynamics | |