Syllobus–707

1 Material

Physics 707 is the first part of a three-quarter sequence intended for first-year physics graduate students. The principal text is J. D. Jackson, *Classical Electrodynamics*, second edition, (Wiley, New York, 1975). This is supplimented by my course notes. They will be available in the library, on the anonymous ftp site (physuna.phs.uc.edu, subdirectory Courseware/Grad_Courseware/E_M/Q1), and will be given to one member of the class for photocopying.

In the first quarter, or 707, the course covers electrostatics and magnetostatics with emphasis on the solution of boundary value problems. Techniques explored include the method of images; Green's functions; and orthogonal function expansions in Cartesian, cylindrical, and spherical coordinates. Multipole expansions are also discussed with application to the properties of macroscopic media, i. e., dielectrics and magnetic materials. The use of symbolic mathematics, simulations, andcomputer visualization will be emphasized throughout. Roughly, chapters 1 through 5 of the text are covered in Physics 707.

2 Grading

The grade will be based upon the final and midterm exams and the homework. There will be 5 homework assignments consisting of several problems each. The midterm will be 1 hour and the final 2. The exams and homework will each count toward 1/2 of the grade.

3 Drop Date

Quarter	Withdrawal Deadline
Winter	Friday, March 1, 1994