PHYS4201 (Fall 2004) Course Information

Instructor:

Dr. K. Nakayama

Office: room 219, Physics Building

Email: nakayama@hal.physast.uga.edu

Office Hours:

Mondays, Wednesdays, Fridays: 10:00-11:00am

Textbook:


Web Page System:

This course information will also be posted on the world wide web. The URL for the page is

http://www.physast.uga.edu/courses.html (click on Nakayama)

Topics to be covered:

Below is a tentative list of topics to be covered in this course. Note that it is subject to changes. The corresponding homework assignments are also subject to changes accordingly. These changes will be announced in class. Each student is fully responsible to keep track on such changes by attending class.

1) Vector analysis including vector calculus: the gradient, divergence, curl, Laplacian: Gauss’ theorem, Stokes’ theorem; curvilinear coordinates; the Dirac delta function.

2) Electrostatics: Coulomb’s Law, electric field and Gauss’ Law; electric potential; boundary conditions; electrostatic energy; perfect conductors.

3) Special techniques: Laplace’s and Poisson’s equations; uniqueness theorem; method of images; separation of variables; multipole expansion.
4 Magnetostatics: Biot-Savart’s Law; Ampere’s Law; vector potentials; multipole expansions.

Homework:

Homework assignments will be posted on the course web page, along with the due dates. Homework will be graded and count toward your final grade. Solutions to homework problems will be posted on the web. It goes without saying that homework is due on the day it is assigned to be due. Late submissions will not be accepted.

Tests:

There will be 2 tests during the semester, the dates of which will be announced in class. There will also be a cumulative final exam. All tests and the final exam will be closed-books and closed-notes.

Final Exam:

The Final Exam will be on Wed., Dec 15 from 8:00 to 11:00 am.

Grading:

Homework: 20%
Average of Tests: 50%
Final Exam: 30%

The final letter grading scale: 85% – 100% : A; 70% – 85% : B; 55% – 70% : C; 45% – 55% : D; < 45% : F.