

August 26, 2016

## Physics 212 General Information Fall 2016

**Subject matter:** Physics 212, Electricity and Magnetism I, extends from what you learned from Physics 21 to more advanced topics of electrostatics and magnetostatics in greater depth. An emphasis is on solving the Laplace Equation with different types of boundary conditions. Prerequisites: PHY 21 or 13; MATH 205, previously or concurrently.

**General Plan:** Classes meet three times per week for 50 minutes each, in Lewis Lab 511, 9:10 to 10 am, Monday, Wednesday, and Friday. Homework is assigned approximately once per week.

**Textbook:** *Introduction to Electrodynamics, Fourth Edition*, by David J. Griffiths, (Pearson, Addison Wesley)

**Instructor:** H. Daniel Ou-Yang, professor of physics.

Office: Physics Building, Fairchild Lab 206 and Lewis Lab 124. Email: [hdo0@lehigh.edu](mailto:hdo0@lehigh.edu). Phone: x83920 (Office) or x85720 (Lab).

### Final Competencies:

The students are expected to learn the physical concept and necessary mathematical tools to solve the following problems:

- 1) Apply the Coulomb's law to determine E field and electrostatic forces
- 2) Applied the concept of electric potential to determine E field and vice versa
- 3) Solve the Laplace equation in different coordinate systems
- 4) Solve problems of electric field in polarizable materials
- 5) Solve problems of magnetostatics
- 6) Solve problems of magnetic field in magnetic materials

**Additional Course Materials:** The course follows the textbook by Griffiths closely. Additional information regarding the course schedule, homework assignments, and solutions to homework problems can be found on the Course Site, which you can access through your Lehigh portal. You are responsible for obtaining these materials by checking the Course Site in a timely manner.

**Grades:** The course grades are distributed on the following scheme: First Hour Exam 100; Second Hour Exam 100; Homework 50; Lecture participation and quizzes 50; Final Exam 200; Total 500. D or lower grades are not given to anyone who attends the lectures regularly and turns in all the homework assignments and tried hard in all exams.

**Notes and Equation Sheet:** The exams are closed-book. The information on the inner pages of the front and back covers of the book will be provided at the exam. A page of

self-prepared, hand-written notes, excluding homework solutions and textbook examples, is permitted at the exams.

**Homework:** The objective of the homework assignments is for you to learn how to think through problems and solve the problems with methods you learn from the textbook, lectures, and class discussions. Solutions to the homework will be posted on the Course Site soon after the due date.

**Quizzes:** There may be a quiz on Fridays at the beginning of the lecture. One missing quiz or the lowest score of the taken quizzes will not be counted toward the total quiz score.

**Makeup Exams:** No make-up quizzes, hour or final exams are given under any conditions. If an hour exam is missed for a legitimate reason, the corresponding portion of the final exam that covers the same course materials will be counted as the missed exam.

**Attendance Policy:** Attendance in the lectures is required.

**Office Hours:** Office hours can be arranged with the instructor in person or by emails in advance. The instructor is also available in his office (Physics, Fairchild Lab 206) or his laboratories (Physics, Lewis Lab 122 and 124).

**Disability:** If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, University Center 212 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.