

PH 445/545-1B

Electromagnetic Theory I

FALL 2005

Lecture: MWF 9:00-9:50

Room: 394 Campbell Hall

Textbook: *Introduction to Electrodynamics*
(3rd edition) by David J. Griffiths

Instructors:

UA Prof. L. Clavelli, 336 Gallalee Hall, Tele: (205) 348-3794, FAX: (205) 348-5051,
email: lclavell@bama.ua.edu

Office Hours: MWF 1:30-2:30pm or by appointment

UAB Prof. D. Shealy, 310 Campell Hall, Tele: 934-8068, FAX: 934-8042,
email: dls@uab.edu ;

web page: <http://www.phy.uab.edu/~shealy/teaching/PH445/index.htm>

Office Hours: Tu-Th 1-2pm or by appointment

Grading: Each hour exam (1/6)

Homework (1/3)

Final Exam (1/3)

**Term Project for Graduate Students (8 % of term grade) – more information
will be provide in separate handout**

No make up exams will be given for hour exams. Students who have submitted a valid excuse for missing an hour exam will have their final exam weighted more heavily

Graduate students enrolled in PH545 are assumed to have had more exposure to introductory physics concepts and are expected to utilize this in answering homework and exam questions. This expectation is reflected in the assignment of partial credit on exams and homework. When comparing scores on exams and homework with undergraduates enrolled in PH445, keep this difference in mind.

Course Description: The course will cover static problems in electricity and magnetism including the electrostatics of material media.

Objectives: By the end of the course the student will be expected to have developed some facility with the physical and mathematical methods used in treating static problems in electromagnetism.

CH1: MATHEMATICAL PRELIMINARIES: AUG 24, 26, 29, 31 SEP 2, 5, 7

CH2: ELECTROSTATICS: SEP 9, 12, 14, 16, 19, 21, 23, 26, 28, 30

1ST HOUR EXAM: MONDAY OCT 3

CH3: SPECIAL TECHNIQUES: OCT 5, 7, 10, 12, 14, 17, 19, 21, 24

CH4: ELECTRIC FIELDS IN MATTER: OCT 26, 28 NOV 2, 4, 7, 9, 11

2ND HOUR EXAM: MONDAY NOV 14

CH5: MAGNETOSTATICS: NOV 16, 18, 21, 23, 28, 30 DEC 2,5,7,9

FINAL EXAM: DEC 12, 8-10:30AM

This schedule is tentative and may not be followed exactly. Class attendance is strongly encouraged. Each student is responsible for any material covered in class as well as for being informed of any change in this schedule.

Term Project for Graduate Students: Use any computational tool to solve static problem in electricity and magnetism, which is approved by instructor. More details to follow.