

Physics 231 (Fall 2014)
FUNDAMENTALS OF PHYSICS: Electricity and Magnetism

Professor: Dr. Steven Johnston

Class times: 8:00 – 8:50 A.M. (Mon., Wed.)

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Office Hours: MWF 10:30-11:30 AM, or by appointment.

Textbook: *University Physics with Modern Physics* by H. D. Young & R. A. Freeman.

General Course Description:

This is an introductory course in Electricity and Magnetism. It will cover the material given in chapters 21 through 31 of the textbook and is intended to give you a fundamental background in E&M.

Course Material:

The class covers most of the materials described in Chapters 21-31 of the textbook and consists of several components: lectures, laboratories, homework problems, and reading assignments in the textbook. The material you are expected to learn (and will be tested on) will be taught to you as part of all of these course components. In particular, I stress the importance of problem solving and carefully working (not just reading) your way through all the parts of the textbook. Reading the relevant chapter or sections for each week's lectures (i.e. Reading assignments) is a compulsory and vital part of the course. The lectures will NOT just repeat the material in the textbook, but will be rather used to discuss the course material in a variety of ways. Some lectures will follow the textbook, others will discuss topics not covered in the textbook, and/or discuss them in a different manner.

Prerequisites:

The course and text presume you are familiar with calculus and calculus concepts. A background in mathematics up to the level of Math 141-142, or equivalent, is highly recommended and is probably necessary for success in the course.

Course Repetition Policy:

If you are repeating the course, please refer to the Laboratory Policy Regarding Repeating a Course (<http://www.phys.utk.edu/labs/Lab%20Repeat.pdf>).

Announcements, Lecture Notes, and Course Updates
(<http://online.utk.edu>):

Aside from in-class discussion, the primary method of communication will be via Blackboard and/or email. This syllabus and other material and announcements will be posted there. Copies of the lecture material will also be posted. Your grades on in-class exams will be posted in the Blackboard Grade-book (your grades will only be visible to

you). At the end of the semester, your homework and laboratory grades will also be posted there, along with your final grade. To log into Blackboard (<http://online.utk.edu>), using your university username and password. After logging in, you can select from “My Courses” the one titled **phys231a-fa2014merged**.

Textbook:

We will use “University Physics with Modern Physics”, by H. D. Young, R. A. Freedman. 13th edition, Addison-Wesley, ISBN-13: 978-0-321-69686-1. If you already have the previous edition (12th), you do NOT need to purchase the new edition. Nonetheless, please be aware that when referring to the text, I will implicitly refer to the content of the 13th edition. It will be your responsibility to keep track of possible changes with respect to previous editions.

Grading:

Your final grade will be determined by a weighted average of your performance on three 50-minute in-class tests, the homework assignments, the laboratory, class participation and the final exam. The relative weighting of each component is as follows:

Three in-class exams: 10% each, 30% total.

Homework: 20%

Laboratory: 25%

Final: 15%

Class participation: 10%

There will also be an additional 10% possible bonus that will be calculated from your clicker responses.

Your letter grade will be obtained from the following conversion:

A	90-100	C	70-72
A-	86-89	C-	66-69
B+	83-85	D+	63-65
B	80-82	D	60-62
B-	76-79	D-	55-59
C+	73-75	F	0-54

Homework:

You can expect approximately one assignment per chapter. These will be assigned On-Line using MasteringPhysics. Please go to the following link and register for MasteringPhysics. There is an introduction “problem set” which you must complete. The ID for this course is MPJOHNSTON43381. An access code for MasteringPhysics should have been provided with your copy of the textbook.

<http://www.pearsonmylabandmastering.com/northamerica/masteringphysics/>

The due dates for problem sets are firm. Please note: No extensions or make-up problem sets will be given. In lieu of extensions, the two lowest scores on homework sets will be dropped from the average.

I generally encourage students to work together as far as homework is concerned. The goal is to use homework as one of the most effective ways of assimilating the material. Do not take advantage of the work of other people, and do not let anybody take advantage of your own work. Your efforts should be shared.

Laboratory:

Attendance is strictly mandatory. The lab instructor will grade work independently. An effort will be made to ensure a uniform grading policy between different laboratory sections. Laboratory make-ups are entirely at the Lab instructor's discretion and arrangements for such must be made with the Lab instructor directly. The laboratory exercises are an important and integral part of this course and have to be completed before a final grade will be assigned. You must complete all of the Laboratory assignments. Please note: **If you fail the Laboratory part of the course, you automatically fail the entire course.** You find the laboratory schedule at <http://www.phys.utk.edu/labs/Fall%202014%20Room%20510%20Schedule.pdf>.

In-Class Tests & Exams:

The in-class tests will be closed book exams, but a list of useful equations and constants will be provided. Questions and problems on the in-class tests and final exam will generally NOT require only a purely numerical answer (this is unlike the homework). In-class and final exam questions will generally be similar in character to example problems in the book and example problems given in lectures. You are required to bring a pencil and a non-programmable pocket calculator to the in-class tests and final exam. No laptops, cell phones, or other means of communication are allowed. The final exam is mandatory; missing the final exam is very serious and may well result in failure of the course.

No make-up 1-hour tests will be given without prior arrangements with me.

Questions and Appeals:

I encourage you to ask questions during the lecture or/and talk to me during my office hours (or by appointment – just ask after class) about the subject. You can discuss with me and/or lodge complaints with me about the grading of a given assignment, be it homework, lab grade, in-class tests or final exam. Appeals will be entertained if they are raised no later than one week after the day on which the material was made available for return to the class. After this “appeal period”, exam grades will be considered final and will not be altered. Any appeal concerning a grade in the Laboratory should directly be discussed with your lab instructor.

For Students with disabilities:

If you need course adaptations or accommodations because of a documented disability, please contact the Office of Disability Services at 2227 Dunford Hall (telephone/TTY 865-974-6087; e-mail ods@utk.edu). This will ensure that you are properly registered for services.

Academic Honesty

All work submitted by a student is expected to represent his/her own work. Students are expected to enter their own homework without assistance from others. Students are expected to perform all work in conformance with the University policies regarding Academic Honesty.