Physics 152L – Electricity and Magnetism – Summer 2010

WELCOME TO PHYSICS 152L. This is the second course in the physics sequence intended for majors in the physical science and engineering. The subject matter is electricity and magnetism and its applications.

The sequence of courses 151L-153L is to be considered as a whole. This course will freely make use of ideas developed in Physics 151L, and the subject matter studied here will be important in Physics 153L. Students should realize that the study of E&M lays a foundation for many other fields where the application may not seem obvious at first, including astronomy, chemistry, biology, and all areas of engineering. During the course, questions about application of the concepts to other fields are always welcome and students are encouraged to ask them on a regular basis.

Prerequisites for this course are Physics 151 (Mechanics and Thermodynamics) and Math 125-126 (Calculus I and II). A co requisite is Math 226 (calculus III).

A certain amount of proficiency in differential and integral calculus is essential to complete this course successfully. If you are rusty, you are strongly advised to review your math.

I. Course Instructor

Prof. Hans M. Bozler
Lecture: MTWW 9:00 AM-11:00 AM SLH 100
Office hours: MTWTh 11:00 AM-12:00 noon or by appointment
Office: SSC 211B
Phone: 740-1125
Email: hbozler@usc.edu

II. Course Materials

II. A. Required for the lecture

Young & Freedman, University Physics, 12th Edition (Addison Wesley, Pearson, 2008).

II. B. Required for the laboratory

Science Notebook (National Notebook 43-645), $14.99, or any equivalent quadrille ruled pre-numbered notebook with bound pages and identically numbered pages for copies is acceptable.

III. Registration

Your registration for this course consists of two separate parts: a lecture and a laboratory. You must be registered for one of each. The only exception is if you have previously completed the

laboratory and received permission to carry a passing grade into the current semester. In that case you would register only for the lecture.

The dates and hours of two midterms and final are given in Section IV C. A summary of important dates is given in Section VI. The location and room for each midterm will be announced during the week before it is given however tests will be usually given in the same room as the lecture.

Students who need to request accommodations based on **disability** are required to register each semester with the office of Disability Services and Programs (DSP). In addition, a letter of verification from DSP is needed for the semester you are enrolled in this course and is to be provided to your course instructor. If you have any questions concerning this procedure, please contact the instructor and DSP at STU 301 or phone 740-0776.

IV. GUIDELINES

IV. A. Grading

Your course grade will be based on the following distribution:

20% Lab
15% homework based quizzes,
5% classwork
15% first midterm
15% second midterm
30% final

In order to receive a passing grade in the course (D- or *above), you must receive a passing grade in both the lecture and the laboratory portions.* **Occasionally a student will fail to complete the laboratory requirements and consequently fail the entire course. Please don't let this happen!**

IV. B. Homework

This session, we are handling homework assignments in a way that we have found to provide an improved educational experience. All homework will be available in both the textbook and also on MasteringPhysics. You will have the option of working the homework in either written form, or on MasteringPhysics as you choose. However for students using MasteringPhysics, I highly encourage the use of a notebook (spiral bound) for the work. You will gain a lot more benefit by having a notebook. The assignments will be considered complete at the beginning of the first class for each assignment that appears on the assignment calendar. Solutions will be posted on the evening before. An in-class quiz (typically two problems derived from the assignment) will be held during the first 25 minutes of the class after the due date. These quizzes will be graded by our grader who will also the same grader for the midterms and final exam. In this way, each student will get a thorough amount of practice for the exams.

We expect that it will take a minimum of four to five hours for most students to complete a homework set. These sets are the central way to master the course material. Understanding physics

implies knowledge of the physical laws and the development of the necessary skills to solve physics problems you have not seen.

Homework problems will range from the trivial to the difficult. Midterm and final examination questions will most closely resemble homework problems on the difficult end of the spectrum. Experience shows a strong positive correlation between homework scores and total exam scores. For these reasons we urge you to attempt every homework problem, even if you are not able to complete each one.

We encourage you to work with friends on deciding how to do the homework. This does not imply simply copying solutions from each other. You can learn a tremendous amount by cooperating and explaining to each other how to analyze a problem, but everyone needs to be engaged in the actual process of figuring out how problems are solved so that each student can think on her/his own during exams.

IV. C. Examinations:

There will be two midterm examinations and a final examination. The midterm exams will last 90 minutes and will be given during the class period. The final examination will last 120 minutes.

*All examinations are **closed book**. We will provide a formula sheet that will also be posted on Blackboard prior to the exam. At present, we do not anticipate that students will need any calculators or other electronic devices and no electronic devices (including cell phones, ipods, mp3 players, etc.) will be permitted during exams. We will review the question of allowing calculators and announce any changes in this policy in advance of an exam.*

There are no scheduled make-up examinations for either the midterms or the final. A missed exam will prevent you from passing unless you have approval from the instructor.

IV. D. Laboratory

Your Laboratory Manuel is available on Blackboard from the lab website. You must read each lab in advance and answer the pre-lab quiz before midnight the night before your registered lab. Lab grades are determined by:

1. The pre-lab quiz due before midnight the night before your lab section meets.
2. Performing the lab and delivering your "Green Sheet bundle" to your lab TA by the end of the lab period, and
3. Your TA's evaluations of your lab performance in lab as well as your "Green Sheet bundle".

You must attend only the lab section in which you are registered. Lab TAs are forbidden to make exceptions. If you miss your lab, you should follow the make-up policy found on the lab section's blackboard site.

For complete details about lab grading and make-up policies, please check the laboratory blackboard site, or contact the Lab director:

Dr. Gökhan Esirgen, KAP-B19
esirgen@usc.edu
(213) 740-1138 Fax: (213) 740-4633
http://physics.usc.edu/~esirgen/

V. Assistance

You have a variety of opportunities for assistance available to you. We list some of these below.

V. A. Lectures

Don't underestimate the value of questions during the lecture period. Almost always, if one student asks a question, there are several others who have been bothered by the same question. Stopping the lecture on these issues *is much more useful* than continuing the lecture without clarification.

V. B. Office Hours

For more personal attention you can come to my office hours. It is possible to schedule an appointment at a time convenient to you if the posted hours do not work.

V. C. Laboratory TA's

All laboratory-teaching assistants are graduate students, usually pursuing a Ph D. in physics. They are all capable of answering any questions you have regarding subject material. Usually your lab TA can answer questions immediately, either at the beginning or at the end of the lab period. However, some problems you pose may require some additional thought. In either event, you should regard your lab TA as a resource not only for the laboratory, but also for lecture-related questions.

V. D. Published Solutions

Homework solution sets as well as sample midterms and final examinations from previous semesters will be made available on the USC Blackboard Class Web-site

http://blackboard.usc.edu

VI. Important Dates for Summer 2010

June 30	First class, Classes on Wednesday and Thursday the first week.
July 5	Holiday "4th of July", No class Monday
July 20	Midterm 1, Monday
August 3	Midterm 2, Tuesday
August 10	Final Examination,

Below, I have posted the assignments from last summer to give students an idea of the pace of the course. You can see that we run a tight schedule, but it works out to be quite manageable. I will post a revised homework assignment schedule before classes begin.

PHYSICS 152L SCHEDULE Summer 2009

Assignment No.	Reading	Assignment	Due Date
1.	Chapter 21.1-6:	7,21,39,55,61,82,87,97,102	7/2
2.	Chapter 21.7:	70	
	Chapter 22.1-2:	6,7,8,32,33,34	7/6
3.	Chapter 22.3-5:	15,31,37,41,48,57	7/8
4.	Chapter 23.1-5:	1,8,23,41,47,51,61,65,85	7/13
5.	Chapter 24.1-6:	5,11,24,32,38,59,71,72	7/15
6.	Chapter 25.1-6:	17,26,36,47,43,63,65,77,86	7/16
	Midterm 1: Monday July 20, 2009		
7.	Chapter 26.1-5:	6,17,22,27,41,48,59,61,76,79	7/21
8.	Chapter 27.1-9:	7,15,31,39,44,46,57,71,72,79	7/23
9.	Chapter 28.1-7:	2,13,23,27,31,36,37,44,72,76	7/28
10.	Chapter 29.1-8	12,29,25,33,36,46,48,59,63,67,70	7/30
	Note: HW test dates will be 7/28 HW 8, 7/29 HW 9, 8/3 HW 10		
	Midterm 2: Tuesday August 4, Material through HW 10		
11.	Chapter 30.1-5:	1,9,11,15,25,33,45,59,65,69,73,77	8/5
	Note: HW test on assignment 11 and review on 8/6		
12.	Chapter 31.1-6:	1,7,19,29,37,49,51,53,57,66	8/6
13.	Chapter 15.1-3:	56	
	Chapter 32.1-5:	1,4,8,15,17,39,43,55	8/10

Lecture Final Exam (Cumulative) – Tuesday, August 11, 2009: 9:00-11:00AM