Physics 152L – Spring 2015

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.

This course will freely make use of ideas developed in Physics 151L. The subject matter studied here will be important in Physics 153L and also will lay the foundation for many other fields, including astronomy, chemistry, biology, and engineering.

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. Jack Feinberg
   Lecture: Mon and Wed, 10:00 am to 11:50 am in SLH 102
   Office hours: Thursdays, noon -1:30 pm, in SSC 327 or by appointment
   Office Phone: 213-740-1134
   Email: feinberg@usc.edu

II. Course Materials
   II. A. Required for the lecture
   Knight, Physics for Scientists and Engineers, 3rd Edition. Professor Feinberg’s class will not use clickers nor require the use of Mastering Physics, although you are welcome to use its resources. This textbook is available in the USC bookstore, from Amazon, or other sources for a bit less than the price of a fully-loaded Porsche 911 Carrera-S.

   II. B. Required for the laboratory
   Science Notebook: National Notebook 43-645 or any equivalent quadrille ruled pre-numbered notebook with bound pages and identically numbered pages for copies is acceptable. You can use your notebook from Physics 151 as long as it has a few dozen unused pages in it.

   II. C. Electronic Devices Must Be Turned Off During Lecture
   If you have a disability that prevents you from taking notes by hand, then talk with the instructor before class. Otherwise, all computers, tablets, and cell phones must be turned off during lectures.

III. Registration
   Your registration for this course consists of three separate parts: a lecture, a “quiz” (see below) 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 and quiz.
Associated with each lecture is its own “quiz” section. The “quiz” section is simply a reserved time block for conducting course midterms and possible review sessions. The dates of the two midterms and the final are given in Section V1 below, as well as a summary of other important dates. The location and room for each midterm will be announced the week before the exam is given.

The laboratory section meets once each week for three hours. You may register for any laboratory section that suits your schedule, subject to availability. For current laboratory information refer to your USC Blackboard page.

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 213-740-0776.

IV. GUIDELINES

IV. A. Grading

Your course grade will be based on roughly the following distribution:

- 20% Lab
- 15% homework plus in-class quizzes (see IV.C below)
- 17.5% first midterm exam
- 17.5% second midterm exam
- 30% final exam

In order to receive a passing letter grade in the course (D- or above), you must receive a separate passing grade in both the lecture and the laboratory portions of the course. Each semester a few students fail to complete the laboratory requirements and consequently fail the entire course. Don’t let this happen to you!

IV. B. Homework

Written homework will be assigned each Wednesday and your solutions will be handed in at the start of class on the following Monday. Your homework solutions cannot be e-mailed, faxed, or texted; you must hand your solutions in at the beginning of Monday’s class. The homework assignments must be completed by the due date. Late homework is never accepted. Homework will be graded and returned to the students. Homework assignments and solutions will be posted on our custom class web site:

www.physlink.com/classroom

(We will not use Blackboard.)

It will take a minimum of four to five hours each week for most students to complete a homework set. Completing these homework sets is the only way to master the course material.

Homework problems will range from trivial to difficult. Midterm and final examination questions will most closely resemble those homework problems at the difficult end of the spectrum. Experience shows a strong positive correlation between homework scores and total exam scores. For this reason 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, but you cannot simply copy solutions from each other. You can learn a tremendous amount by cooperating and explaining to each other how to analyze a problem, but each person needs to understand how to solve the homework problems. The homework that you hand in must be your own work. Handing in work that is not yours is called cheating, and cheating will get you expelled from this course and possibly from this University.

The Supplemental Instruction (SI) Program provides a structured way to cooperate on solving homework problems – see Section V. E. below.

IV. C. In-class quizzes:
The “quiz” section for which you all registered is reserved to keep that time slot open for the midterm exams. However, there will be actual in-class quizzes given at the beginning of random lectures. The quizzes will be based on the homework problems. Your score on these in-class quizzes will count towards your homework grade. There are no make-ups for these in-class quizzes. If you miss an in-class quiz because you are absent or arrived late to a lecture, you cannot make it up.

IV. D. Examinations:
There will be two midterm examinations and a final examination. Each midterm exam will be given during the scheduled “quiz” time allocated for this class.

    The first midterm will be given on Thursday, Feb. 19 starting at 5:00 pm.
    The second midterm will be given on Thursday, April 2 starting at 5:00 pm.
    The final examination will last 120 minutes and will be given on Monday, May 11 from 4:30- 6:30 pm. (Note that the final exam time for Physics 152 appears in the “Exceptions” list of USC final exams.)

All examinations are closed book. No electronic devices (including cell phones, ipods, ipads, mp3 players, Google Glass etc.) will be permitted during exams. However, we will consider possibly allowing calculators and will announce any changes in this policy in advance of an exam.

There are no scheduled make-up examinations for either the midterm exams or the final exam. A missed midterm exam will probably prevent you from passing the course; a missed final exam guarantees a failing grade.

IV. E. Laboratory
The first meeting of the Physics 152L laboratories will be held during the second week of classes. Do not miss this first meeting or you may lose your registered lab period!

Your Laboratory Manual is available on your Blackboard website. You must read each lab in advance and answer the pre-lab quiz before the beginning of your registered lab session. Lab grades are determined by
1. The pre-lab quiz due before your registered lab session begins.

2. Performing and completing every activity in the lab, answering all the review questions at the end of the experiment, and delivering your lab write-up (carbonless copies of your lab-notebook pages) 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 lab write-up.

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

You must carefully read and understand the laboratory policy found under Course Information on the Blackboard lab site. The lab schedule and TA schedule are also found there and you can use the e-mail tool to contact the TAs. If you need further assistance, please 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 assistance available to you:

V. A. Questions During 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. Instructors Office Hours
For more personal attention you can come to your instructor’s office hours. It is also possible to schedule an appointment at a different time convenient to both you and your instructor.

V. C. Teaching Assistants
All teaching assistants are graduate students, usually pursuing a Ph.D. in physics. They are all capable of answering any questions you have regarding the 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 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. In addition, teaching assistants are available from 10 am – 4 pm Monday through Thursday in room SGM 409, and they can help you with any physics questions.

V. D. Homework Assignment and Solutions
Homework assignments and solution sets, as well as sample midterms and final examinations from previous semesters, will be made available on our class’s custom web site:
Log-in instructions for this site will be discussed in class during the first week of lectures. We will not be using Blackboard (although the laboratory will be using it.).

V. E. Supplemental Instruction Program (SI)
The SI Program is an academic program designed to improve student performance in this course and in several other traditionally difficult courses. It is free and does not require registration. Each week there will be several sessions, led by an SI leader who will be working with the instructors and attending the same lectures you do. All Physics 152L students can attend any of the weekly sessions and exam reviews that will be announced in your lecture. There is an SI web page for a schedule of weekly sessions and exam reviews. Its link can be found on: [http://dornsife.usc.edu/supplemental-instruction/](http://dornsife.usc.edu/supplemental-instruction/)

V. F Viterbi Academic Resource Center [http://viterbi.usc.edu/tutoring](http://viterbi.usc.edu/tutoring)

The Viterbi Academic Resource Center office is located in the Ronald Tutor Hall of Engineering, Room 222, and provides free individual tutoring as well as group tutoring, with tutors screened by the School of Engineering. Its hours are posted at [viterbi.tutoring@usc.edu](mailto:viterbi.tutoring@usc.edu). Regular review sessions are planned. For more information contact the Engineering Student Affairs Office, RTH 110. Other contacts: 740-3381, viterbi.tutoring@usc.edu.

VI. Important Dates for Spring 2014

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<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Jan. 12</td>
<td>Spring semester classes begins</td>
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<tr>
<td>Jan. 12-16</td>
<td>Late registration and change of program.</td>
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<td>Jan. 19</td>
<td>Martin Luther King Day, university holiday</td>
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<td>Jan. 30</td>
<td>Last day to drop a class without a mark of &quot;W&quot; and receive a 100% refund</td>
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<tr>
<td>Jan. 30</td>
<td>Last day to change enrollment option to Pass/No Pass or Audit</td>
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<tr>
<td>Feb. 16</td>
<td>Presidents' Day, university holiday</td>
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<tr>
<td>Feb. 19</td>
<td>Midterm 1, Thursday starting at 5:00 pm (location TBA)</td>
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<td>March 16-21</td>
<td>Spring recess</td>
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<tr>
<td>April 2</td>
<td>Midterm 2, Thursday starting at 5:00 pm (location TBA)</td>
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<td>April 10</td>
<td>Last day to drop a class with a mark of W.</td>
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<tr>
<td>May 1</td>
<td>Spring semester classes end. (Our last class is Wednesday, April 30)</td>
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<td>May 2-5</td>
<td>Study days</td>
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<tr>
<td>May 11</td>
<td>Final exam, Monday 4:30 - 6:30 pm (location TBA)</td>
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