PHYS 102 Electricity and Magnetism
Spring 2015

CONTACT INFORMATION

Instructors

Dr. Jason H. Hafner, Brockman Hall 262, ext. 3205, hafner@rice.edu
Office Hours Mon. 11:00 - 1:00

Dr. F. Barry Dunning, Brockman Hall 320, ext. 3544, fbd@rice.edu
Office Hours Fri. 2:00 – 4:00

Dr. Laria Redjimi, Brockman Hall 110, ext. 2219, laria@rice.edu
Office Hours Tues. 12:00 – 2:00, Thurs. 12:00 – 2:00

Dr. Lam Yu, Brockman Hall 240, ext. 2894, lhyu@rice.edu
Office Hours Wed. 11:50 – 1:50, Thurs. 12:20 – 2:20, and Fri. 11:50 – 1:50.

LEARNING OBJECTIVES

This course serves as an introduction to electricity and magnetism. You will learn about how matter becomes charged, and about the physical interactions between charges as described by Maxwell’s Equations. Applications to basic circuit elements in both DC and AC circuits will also be addressed.

COURSE INFORMATION

Announcements: Primarily available on the Physics 102 Owl-Space page under the "Announcements" tab. Registering for PHYS102 automatically registers you for the PHYS102 site on Owl-Space.

Textbook/Webassign: We are using a special edition of the textbook by Serway and Jewett: Physics for Scientists and Engineers, Hybrid (with Enhanced WebAssign Homework and eBook LOE Printed Access Card for Multi Term Math and Science), 9th Edition, ISBN 9781133954132. Do not buy used versions of this textbook online as they are highly unlikely to include the necessary access code to the online homework system – WebAssign. If you do have a version of the textbook it is possible to purchase the Webassign access separately on their website. The WebAssign class key for PHYS 102 section 001 (9:00 am) is “rice 4931 2147”. The class key for section 002 (10:00 am) is “rice 2546 3184”.

Calculator: You should have a hand-held calculator for use in doing calculations in quizzes, homework, pledge problems and exams. It does not need to be programmable, but it should compute trigonometric and exponential functions.

Class Meetings: MWF 9 am (section 1) or 10 am (section 2). These periods will be devoted to lectures that systematically introduce a particular set of ideas, demonstrations that illustrate the ideas, and problem solving strategies. You may attend either (or both) section(s).

Laboratory: The online lab preference form can be found in the “Lab Preference Form” link under the PHYS 102 F15 tab in Owl-Space. You do not have to register separately with the university registrar for the
lab. Performing the laboratory experiments is very important and missing a laboratory is a prescription for loss of credit. Laboratory policies are presented in more detail in the laboratory manual available on Owl-Space. All questions related to the laboratories should be directed to Dr. Yu.

COURSEWORK AND GRADING

**WebAssign Homework:** You will be assigned weekly homework problems in the WebAssign online homework system. These will provide experience in problem solving and in using the concepts discussed in the course. They are selected to help you prepare for the quizzes, pledged problems, and exams. You are encouraged to discuss these suggested problems with fellow students, tutorial leaders, and instructors. You may attempt to answer each question up to 5 times. Note that students will get individualized versions of the problems (i.e. the numbers in your version of the problem may be different to your classmates) so you will need to work out the final answers for yourself.

**Quizzes:** Pledged quizzes will be administered weekly online via WebAssign. When taking the quiz you can consult your notes, book, and course materials, but not other students. The quizzes are taken in a single sitting and will have a 1 hour time limit. The quizzes consist of multiple choice problems similar to those found on the exams.

**Pledged Problems:** Pledged homework problems will be distributed weekly via WebAssign. These are intended to give you some experience in working, completely on your own, problems that are typical of those that will appear on exams. In working on the Pledged Problems, you may consult your own notes, problem solutions we have posted, your own textbook, and a calculator; all other resources are banned. Pledge problems will also have a 2 hour time limit.

**Tests and Final Examination:** 90-minute tests will be given at 7:45 AM on Tuesday, Feb 17th and 7:45 AM on Tuesday, March 31st (both tentative). There will also be a three-hour COMPREHENSIVE FINAL EXAMINATION that will be scheduled by the registrar. Non-programmed hand calculators may be used on tests and the final examination but no books or notes will be allowed. You may not use cell phones or tablets as calculators. Solutions to tests and the final examination will be posted to Owl-Space. Typically, there is a review session a few days before the exam.

**Test and Exam Grading:** Grades on free response assignments are based on what you actually write down. Ordinarily, the answer to a problem by itself, even if correct, is not sufficient to obtain full credit; you must also show that your method of solution is correct. Proper physical reasoning, when clearly demonstrated, will earn significant amounts of partial credit, even in the face of grievous mathematical errors. The grader should be able to determine, without guessing, the steps used to solve the problem.

**Regrading Policy:** Do not write in a graded exam book or homework problem after it has been returned to you. If, after consulting the solutions we have prepared, you feel that your work was not correctly graded, please direct our attention to the specific issues by means of a note on a separate sheet stapled to your paper. Submit it to your instructor within one week after the solutions were posted. We will review the grading of the part to which you direct our attention, and possibly the rest of the paper to insure that your grade is consistent with the instructions given to the graders, and re-determine the grade that the paper deserves.
**Tutorial Sessions:** There will be help sessions held each week. Students in attendance will work together in cooperative groups on the suggested problems under the guidance of a tutorial leader. These sessions are intended to help in developing skills in solving physics problems. Tutorial leaders can also assist you in reviewing previous work such as pledged problems and quizzes to help you learn from your mistakes prior to an examination. You may attend any tutorial session. *These sessions are not mandatory.*

**Make-ups and Excused Days:** Make-ups for missed quizzes, pledged problems, tests, or laboratories will be given at the discretion of the instructor. You can be excused without penalty or be allowed a delayed make-up of quizzes, pledged problems or tests if one of the following two conditions is met:

1. You are on official university business or you have a conflicting class, and you notify us well beforehand. If you have a conflicting class, a signed note from the instructor of that course is required stating that you actually attended class on the day of the test.
2. You have a serious reason beyond your control, such as your own illness or a death in your family, and you get word to us immediately. As soon as possible, notify your instructor in writing or by e-mail. (The policy on laboratory make-ups is stated in the lab manual available on Owl-Space).

**CALCULATION OF SEMESTER GRADE**

Your semester grade will be determined from an average that will be weighted as follows:

- Two tests ------------------ 30%
- Final Exam ------------------ 20%
- Pledged Problems --------15% (one lowest score will be dropped)
- WebAssign Homework -------- 10%
- Quizzes-------------------------- 10% (one lowest score will be dropped)
- Laboratory ------------------ 15%

Additionally you must receive a final laboratory grade of 50% or above in order to pass the course. You should retain all your tests, pledged problems, suggested problems, and the final exam so that you can confirm the accuracy of our records, which we will update regularly on Owl-Space. Students who receive a weighted average of 90% or greater will receive a grade of at least A-, while those obtaining a weighted average of 75% or greater will receive a grade of at least a B-, and those students who obtain averages of 60% or greater will receive a grade of at least C-. We may lower these cut-offs at the end of the semester, but we will not raise them.

**THE HONOR SYSTEM**

We believe very strongly in the Rice Honor System: it applies to all work submitted for a grade in the course (except for suggested problems), and we perform our due diligence as instructors in upholding it. The Honor Pledge should be written in full and signed on the pledged problems, tests, the final examination, and any other work that has been announced as pledged. Note:

1. Students will be seated in tests and exams in alternate rows, alternate seats, or as otherwise directed by the person administering the test or examination.
2. Test or examination papers will not be taken from the examination room without the permission of the person administering the test or examination. If you have a special problem with taking a test in the place to which you have been assigned, please let us know. Numerous resources for solving physics problems are available via the Internet. These sites can be perfectly legitimate tools when seeking additional examples to learn difficult concepts, but none of them are permitted for use on pledged assignments, such as quizzes, pledged problems, and tests. We are aware of many of these sites and maintain user profiles on them that allow us to check for PHYS 102 course content appearing thereon.

STUDENTS WITH DISABILITIES

Any student with a documented disability seeking academic adjustments or accommodations is requested to speak with the instructors during the first two weeks of class. All such discussions will remain as confidential as possible. Students with disabilities are encouraged to also contact Disability Support Services in the Allen Center (e-mail: adarice@rice.edu, phone: 713-348-5841) during the first two weeks of class so that timely and appropriate arrangements may be made.