Instructor: Dr. Sorinel Adrian Oprisan  
Office: JC Long building, room 228  
Phone: (843) 953-0780  
Email: oprisans@cofc.edu  
Co-requisite: General Physics II  
Class time & place: Wednesdays, 3:20-6:20pm, Harbor Walk West 111  
Office hours: Mondays 2:00pm-3:00pm; Wednesdays 2:00pm-3:00pm; or by appointment.

General Physics II Lab complements the corresponding lecture of the one-year introductory course in physics for science majors. The goals for this course are to enhance your reasoning skills; confidence, knowledge, and technical expertise that will help you become a future leader in your profession. “Subjects covered are: electricity (electric fields, AC and DC circuits); magnetism; light (geometric and physical optics, spectra); and modern physics (relativity and nuclear physics)” (according to the Catalog’s description). The lectures and the adopted textbook cover the theoretical background.

General Education Learning Outcomes:
1. Students apply physical/natural principles to analyze and solve problems.
2. Students demonstrate an understanding of the impact that science has on society.

These outcomes will be assessed with a signature assignment during the laboratory sessions.

Other Education Learning Outcomes:
- Enhance observational and analytical skills.
- Develop an appreciation for qualitative and quantitative reasoning.
- Develop teamwork skills.
- Make measurements with common instruments.
- Make objective observations of physical phenomena.
- Draw conclusions based on observations and data.
- Analyze quantitative information using sketches, graphs, tables and statistics.
- Conduct quantitative and qualitative discussions of observational errors.
- Produce an acceptable lab report.

The following is a tentative schedule and the topics and/or dates could change during the semester to accommodate unforeseen events.

01/14 Electrostatics  
01/21 Electric Fields  
02/04 Simple DC Circuits  
02/11 Kirchhoff’s Laws  
02/18 RC Time Constant  
02/25 Magnetic Field  
03/11 Electric Motor/ Induction  
03/18 Reflection and Refraction  
03/25 Lenses  
04/01 Interference  
04/08 Spectroscopy  
04/15 Photoelectric Effect  
04/22 Radiation
The final grade is composed of:

- Lab reports 65%
- In-class quizzes 20%
- Signature assignment 10%
- Attendance and class participation 5%

Grading scale

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<th>Letter grade</th>
<th>A</th>
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<th>B+</th>
<th>B</th>
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<th>C-</th>
<th>D+</th>
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<td>60.00-62.99</td>
<td>Below 60.00</td>
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Lab Report

Generally, the lab report will be a collective effort submitted by the entire group. At any time, a student may choose to prepare and turn in an individual lab report, independent of their lab partners.

The format of your lab report should include the following sections:

Title page: Title; Author(s), date, lab section, instructor’s name; Abstract
Introduction: Objectives (This is the experimental objective, not the pedagogical one. You may rewrite in your own words the objectives stated in the lab handout.);Theoretical background (Sketch the apparatus and describe the important features and variables to be measured.); Materials and experimental procedure (Could be a brief narrative or a series of steps. The sketch is particularly useful in connecting variables in equations with physical aspects of the apparatus.)
Results: Experimental data (Data and results can often go in the same table(s). Put SI units in the column header. Graphs should be on graph paper or computer generated plots of a suitable size.); Error analysis (Discuss the limitations of the experiment, and intrinsic sources of errors. Quantify the errors intrinsic to the procedure and tools. Estimate quantitatively whenever possible how big an effect the uncertainties and errors had on the result.); Results, calculations and discussion (This is where you show your calculation, show your final results, give your answers, discuss their significance, compare/contrast to accepted values, and perhaps speculate on how to do it better, within reason.)
Conclusions: Don’t repeat the results, but interpret their significance. Did you prove or disprove anything? Did you support something? Did you meet the objective(s)? Avoid subjective evaluations of your results or the experiment, e.g., “Our results are good.” Group effort reports should have a brief statement describing the division of labor. It is expected that students will rotate the responsibilities in generating the reports. The instructor reserves the right to assign a particular part of a lab exercise to a student.

The most important part of your lab report contains the experimental data, the analysis you performed and the conclusions that you drew. You may attach tables and
figures on separate pages. You may use any kind of spreadsheet you are familiar with, or willing to learn how to use, provided it has at least the simple capability of data import/export, perform algebraic operations on data, perform matrix multiplication, print tables and plot and export graphs. The lab report is due at the beginning of the next lab meeting unless is specified otherwise. All lab reports must be typed. Mathematical formulas may be neatly written by hand. The lab report for the previous class meeting is considered late after the end of the current lab meeting. Late assignments will be penalized 25% each day or fraction thereof.

In-class quizzes
Lab sessions may begin with a short (10-20 minutes) quiz consisting of both conceptual and quantitative questions based on the material from both the previous and the current lab. No credit will be received for a missed quiz and there is no quiz make-up.

Signature assignment
This assignment is due on the last day of class meeting, i.e. April 22, 2015. I strongly encourage you to start working on it as soon as possible and present a rough draft to me at midterm. Use the attached grading rubric to self-assess your solution to this assignment.

Attendance and class participation
Attendance is mandatory and you are not allowed to return on put your name on colleagues’ lab report for a missed session. According to the College of Charleston Academic Regulations, “students are expected to attend all classes and laboratory meetings of each course in which they enroll.” For any absence you should contact the office located at Stern Student Center, Room 306, 71 George Street, Charleston, SC 29424 (phone: 843-953-5522) to discuss absences and fill out the appropriate forms. Absence memo forms are also available online at http://deanofstudents.cofc.edu/. There are no make-up labs.

This portion of your grade will depend on your attendance both physically and mentally. You are expected to be in class on time each week—absences or tardiness will adversely affect your grade. While in class, your attention should be focused on your lab tasks. You are expected to come to class prepared and work efficiently until you and your partner have completed the assignment.

Lab notebook
Each student is expected to participate fully in all aspects of the experiment and to keep his/her own lab notebook. The data in the lab notebook must be recorded in a permanent form and with enough explanation so that memory is not required to figure out what a set of numbers is about. The lab notebook should be complete, i.e. anyone taking physics should be able to understand all aspects of the experiment (goals, design, measurements, etc.), follow the calculations and your conclusions regarding the experiment. The physics lab notebook should be dedicated solely to physics lab since it will be turned in during the semester to be graded.
Class conduct
- There shall be no eating, drinking, or sleeping in the classroom.
- Cell phones, beepers, headsets, iPods and any other electronic devices that may disrupt the class must be turned off and put away prior to class unless you have a job requiring them to be on for safety (firefighter, EMT, etc.)
- Computer use is limited to taking notes or participating in classroom activities.
- Refrain from talking out loud and/or inappropriately to the extent that it is disruptive to the learning process.
- Arrive on time to class to avoid disrupting the learning process.
- Do not leave trash behind (e.g., cups, containers, wrappers, etc.)
- Recording (video and/or audio) my lectures is allowed only with my written consent. See also Section 33 “Classroom Code of Conduct” of the Student Handbook (http://studentaffairs.cofc.edu/honor-system/studenthandbook/documents-pdfs/handbook.pdf).

Center for Student Learning (CSL) offers academic support services for assistance in study strategies, speaking & writing skills, and course content. They offer tutoring, Supplemental Instruction, study skills appointments, and workshops. The services are available to you at no additional cost. For more information regarding these services please visit the CSL website at http://csl.cofc.edu or call (843)953-5635.

Rights of students with disabilities (http://policy.cofc.edu/documents/12.5.2.9.pdf)
“The College of Charleston and the Graduate School actively and affirmatively seek to accommodate any currently enrolled student with a certified disability according to the regulations established by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. Services for students with disabilities (physical, psychological, learning disabilities, ADD/ADHD) are provided through the Center for Disability Services located in the Lightsey Center, first floor, Rm. 104. The web address is http://disabilityservices.cofc.edu/. Telephone number (843) 953-1431 (voice) and Fax: (843) 953-7731. SC Relay System 771 or 1-800-735-2905. Based on these laws, the College of Charleston assures that all programs and services at the College of Charleston are accessible and reasonable academic accommodations that do not affect essential components of the course will be provided to all qualified students.”

Accommodations for SNAP students (http://disabilityservices.cofc.edu/documents/student-guide.pdf)
“Accommodations will be determined on a case-by-case basis and are listed in the student's Professor Notification Letter (PNL). It is the responsibility of the student to give the letter to their professors the first week of the semester. Students are not required to disclose their SNAP status to professors if they choose not to use accommodations in that professor's class.” (http://disabilityservices.cofc.edu/accommodations/index.php)
“Students are asked to sign up for their tests at The Center For Disability Services one week in advance. Professors are not required to accommodate students with extended
Honor Code and Academic Integrity (from http://academicaffairs.cofc.edu/documents/honor-code-language.pdf)

“Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved. Incidents where the instructor determines the student’s actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed both by the instructor and the student, will be forwarded to the Dean of Students and placed in the student’s file. Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student’s transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board. Students should be aware that unauthorized collaboration -- working together without permission -- is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information via a cell phone or computer), copying from others’ exams, fabricating data, and giving unauthorized assistance. Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor. See also Section 9 (page 10) of the Student Handbook (http://studentaffairs.cofc.edu/honor-system/studenthandbook/documents-pdfs/handbook.pdf) and at http://studentaffairs.cofc.edu/honor-system/studenthandbook/index.php