Physics 170L: College Physics 1 Lab

Section 3 Group 2

Tuesdays, 12:00 – 2:50 in PSB 108/110

Course Syllabus

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Office Hours: Wat. 421 (physics library); Mon. 2–3, Th. 3–4, or by appointment

Materials

Lab Manual, 2 Lab Notebooks, Scientific Calculator (graphing not necessary), Ruler, Pen

Course Objectives

The purpose of this course is for you to meet these 3 goals:

1. Better and more thoroughly understand concepts from the Phys 151 lecture.
2. Understand the role of experiments in the sciences, and gain experience in experimental methods and techniques.
3. Learn and develop good lab and lab-notebook habits.

Accuracy of Results

For the experiments in this class, getting the "right answer" (i.e., expected result), while definitely important, is *not* the main goal. Instead, your goal is to learn how to interpret natural events and draw your own conclusions. If your result disagrees with the expected result, it is generally okay – *as long as you can explain why*. Identifying and understanding unusual results is one of the most important parts of science.

Grading

- Lab Reports: 60% of your final grade
  - Reports are due at the *beginning* of class, one week after the experiment is done.
  - Late reports will lose 20% per week after the due date.
  - Reports later than 4 weeks will not be accepted.
  - *All* reports *must* be turned in to receive a passing grade!
- Quizzes: 40% of your final grade
  - Short quizzes (approx. 10–15 min.) will be given at the beginning of most or all classes.
  - Quizzes will cover both the lab you did the previous week *and* the experiment you are about to do. You are expected to read each week's lab before we meet.

Missed Labs & Quizzes

Attendance is crucial. You must perform (and submit a report for) every experiment in order to pass this course. If you know you will have to miss a lab, please contact me as far in advance as possible to avoid any negative impact on your grade. In most cases, you will be able to make up the lab by attending another lab section that same week. Unexcused absences must also be made up, but they will be counted as late. If you attend another TA's lab, you must check with them *in advance* to make sure it is OK; also, any data you take in another TA's lab must be signed by that TA. Quizzes missed due to excused absences will either be made up or canceled. If you miss a lab, it is in your best interest to make it up at the earliest possible opportunity!

Lab Notebooks

You will need 2 lab notebooks. On the front cover, write your name, the class name and section, and my name. The pages must be numbered at the beginning of the semester. Save the first page for the table of contents. *Please see Ch. 1 of your lab manual for more information about lab notebooks; what follows is only a brief overview.* Always document everything as clearly and completely as possible. If you make a mistake, do not tear out the page, cross it out, or use white-out! Instead, neatly draw a single line through it and go on from there.

Each week, you will receive instructions detailing the lab report for that week. Make sure you follow these and any additional instructions you receive during class.

While lab reports will vary slightly from week to week, the general format is as follows:

- Title, date, and name of lab partner
- Purpose: paragraph about objective of experiment
- Procedure: description of what was done, diagram of apparatus
- Data: tables, graphs, charts
- Calculations: at least a sample for each formula and/or type of nontrivial calculation
- Results (optional here): summary of significant numerical results
  - Include uncertainties and units!
  - These are the results that fulfill the purpose you stated for the lab.
- Error Discussion: short discussion of your results, and a comparison to any “known” or theoretical values
  - *This is the most important part of your lab report!*
  - Be sure to mention any errors that came up in your experiment.
- Conclusion: brief discussion of whether or not the experiment met its objectives; also be sure to answer all questions that have been assigned; <u>(re)state results – *mandatory here!!*</u>

Safety

Safety is very important in any lab course. You should not have any problems in this course as long as you exercise common sense and good judgment, but I still expect you to read and abide by the Safety Rules and Procedures listed on page *ix* in your lab manual (right before the Lab Schedule).

Academic Honestly

The University of Hawai'i takes academic honestly very seriously. Academic dishonestly (cheating) of any kind will not be tolerated and will be met with severe consequences. This includes (but is not limited to) sharing answers on quizzes, copying work from others, and intentionally falsifying lab data.

Contacting Me & Getting Help

Email is the best way to contact me. I do not recommend trying to reach me by phone. You are always more than welcome to see me in person during my office hours. If you cannot make it during my scheduled office hours, contact me so we can set up an appointment. You can also see any other TA for help in the physics library (Wat. 421), but please understand that they will give priority to their own students if necessary. A schedule of all TA office hours will be posted outside PSB 114 and also in Wat. 421.

Final Thoughts

This course can be an enjoyable experience that helps you to better understand not only your lecture material, but also how science is done and how it fits into the world around you and the society in which we live. I look forward to a great semester working with all of you.