

Physics 170L – General Physics I Laboratory

Section 2 Group II

Spring2009 University of Hawaii at Manoa

Meeting Time: Tue 12:00PM - 2:50PM

Meeting Place: Physical Science Building

TA: Joe Blow

Email:

Office: WAT #

Office Hours: Mon & Wed 2:30PM - 3:20PM (Physics Learning Center WAT #421)

Required Materials:

Physics 151L/170L Lab Manual, 2 Bound Notebooks, Scientific Calculator, Ruler, Protractor, Scotch Tape, Scissors, Ink Pen.

Student Learning Outcomes:

There are 3 important goals in this course:

- 1) To reinforce some of the concepts that you will learn in physics 170 lecture.
- 2) To gain an understanding of the interplay between theory and experiment.
- 3) To obtain experience in the techniques employed by scientists (in all fields) for analyzing data and drawing conclusions from "real world" experiments.

Important Notes:

When doing an experiment, the emphasis is not on finding the "right" answer. Rather, the emphasis is on learning to interpret natural phenomena and draw your own conclusions.

If you are unable to find the "right" answer, you must explain why.

Your most important skill in carrying out an experiment is common sense.

Document your experience in each experiment in your notebook clearly, including any unusual results you may obtain. Your ability to cope with seemingly unexpected results is an important skill to be developed from your lab courses.

Feel free to improvise during each lab, as long as you stay within the guidelines laid out in the manual and by the instructor.

Learn to collaborate effectively with your lab partner.

Grading: % Lab Reports, 40% Quizzes

All lab reports are due one week from the date the experiment was performed.

Reports must be turned in at the beginning of class.

Late reports will be penalized 20% per week after the due date.

Late reports will not be accepted after four weeks.

All reports must be turned in to receive a passing grade.

Incomplete reports will be returned to you un-graded.

Short 10 minute quizzes will be given out each week at beginning of class.

Missed Labs:

It is essential to attend every lab. If you must miss a lab session please contact me as far in advance as possible to avoid being penalized. In most cases it will be possible to reschedule with another section during the same week. Unexcused absences must also be made up but will be penalized. Any data taken in another lab section must be signed off by that TA. Makeup quizzes will only be given with prior permission or a physician's note.

Report Format:

A worksheet will be handed out each week that will guide you through and explain the specific details of writing your report for that week. Be sure to follow its instructions. In general though, each report should follow the following basic format:

Title, date, and name of lab partner.

Purpose: Write a paragraph describing the objective/purpose of the experiment.

Data: Tables, graphs, and charts (be neat and organized, and make sure to correctly fill in tables and label graphs).

Calculations: Show at least a sample of your work for each type of nontrivial calculation or formula used.

Results: Summarize all significant numerical results with their uncertainties and units.

These are the results that fulfill the purpose stated for the lab.

Discussion of Errors: This is the most important part of your report. Write a short discussion on the results you obtained and comparison to the "known" or theoretical values. Also mention about any errors encountered during the experiment.

Conclusion: Write a brief discussion of whether or not the experiment fulfilled its objectives. Also answer all questions that have been assigned.

Quizzes:

You will be given a quiz each week at the beginning of class. Each quiz will have short questions based primarily on the previous week's lab, but questions pertaining to the present week's lab may also be given. It is expected that you will have read ahead and reviewed the material to be covered before coming to class.

Contact and Help:

The best way to contact me is by email. I will not return phone calls. Please try to take advantage of my scheduled office hours. You can also visit any other TA during office hours or in the Physics Learning Center (WAT #421) for help with lab material (see posted schedule). If it is not possible for you to make my scheduled office hours you can email me to set up an appointment.

Academic Dishonesty:

Cheating of any kind is not tolerated by the University of Hawaii and severe consequences will be imposed. Cheating can consist of sharing answers during a quiz, copying the written work of others and intentionally falsifying experimental data.

Example