

Physics 195 - Spring 2020 Laboratory Section Syllabus

Introduction

The laboratory in general physics has several purposes:

- It provides you with an opportunity for better understanding of the material covered in the classroom.
- It familiarizes you with the scientific process.
- It gives you practical experience in making experimental measurements and evaluating the results thereof.

The scientific approach to problems has many applications outside of the general physics laboratory; the techniques learned will help you make observations and record them accurately, handle new equipment, and solve problems.

Required Materials

I will post an electronic copy of the current lab on the course website. You will be expected to bring to each laboratory class the following materials: the current experiment (in paper or electronic form), a scientific calculator, paper, and a pen or pencil. You may want to reference the textbook.

A list of the major equipment is given with each experiment. (The list does not include the items listed above.) You should make sure that you have all of the items before beginning the experiment. Sometimes the items will be on the lab bench, and sometimes they will be stored in drawers and cabinets located in the lab room. Either way, it is your responsibility to ensure that you have all of the necessary equipment. You are expected to return the equipment to the place from which you got it. You are also responsible for returning the equipment in the same condition in which you received it.

Coats, backpacks, and other items should not be on the laboratory desk or on the floor. There is a place in the cabinet near the door for storing such items.

Procedure

Always read the experiment before coming to class!!! I may discuss the nature and purpose of the experiment, the apparatus, or the procedure to be followed, at the beginning of class; I will not, however, read the experiment to you. As the course progresses, I may not spend any time on preliminary discussions. Unless you have read the experiment carefully, you may not be able to complete the lab in the allotted time.

Safety

To maintain a safe working environment (for you and the equipment), please LISTEN and FOLLOW directions.

Lab Reports

There are no formal lab reports. Because I expect you to work collaboratively with your lab partners each lab group will turn in a report for the group. You will work with your lab partners on the lab and on the report. If someone is not pulling their weight in a group that person will become a group of one and do their labs alone. The lab report will generally consist of a short data sheet, analysis of the data (on a spreadsheet), and answers to questions.

Most lab reports will be due at the beginning of the lab period one week after the lab period in which the data is taken.

(Turn Over)

Lab Notebook

I do not require you to keep a lab notebook in this course. However, I encourage you to do so. The lab notes will serve as a technical journal of what you have done in the lab. Do not record lecture notes or homework assignments on notes pages (although you may wish to copy pertinent information from a lecture or handout for reference in the lab). Learning to keep a good lab notebook now will help in future physics courses like the Electronics and Advanced Lab courses where you *will* be required to keep a lab notebook. You may, in fact, use your lab notebook from this class in those courses. Use the following rules for keeping records:

- Write neatly - your notebook must be readable by others. Write concisely - avoid large printing/writing, as this will make your information more spread out and less easy to review. But do not write so small as to make your writing unreadable. It is not necessary to have flawless notes! Scratch-outs are fine, as are abbreviations and side notes and even late insertions (just be sure to date a later entry).
- Draw a diagram of the experiment and/or circuit; they should be simple, but with enough detail that you could repeat the entire process with only the lab notes.
- Record changes you make, and results of measurements. Write questions you have and concerns about the results. Make simple tables and/or graphs of the results. They need not be final results and graphs are certainly “rough”.
- Always provide enough detail that you could repeat the entire process with only the lab notes as source. Remember that there may be several days between lab sessions, so you might want to write a summary of what has been done and what needs to be done for the next time you work in the lab.

Disclaimer

The previous instructions may change, depending on the experiment. **Any changes made by the instructor during the class will override anything written here.** If you have any questions ask your instructor, that’s what he’s there for.

Remember: Missing more than two labs without a good reason will result in failing the course.