Physics 127A Lab Notebook Guidelines

Spring 2014

You are required to purchase a "computation" laboratory notebook, larger than $8.5 \times 11''$, with bound, gridded, and numbered pages. The notebook will be your record for the lab portion of this course, excluding boot camp.

When you turn in labs, you will turn in a photocopy (or the equivalent) of your notebook. Lab notebooks should be kept neatly and up to date as you work through the exercises. Your lab grade depends on keeping good notes. Mistakes in your lab notebook are fine, and commentary on various tests of your circuits, as well as your mistakes, are encouraged.

Each lab will be graded by one TA and returned to you at the beginning of your assigned lab section. The grading philosophy and criteria are outlined below to help you understand how to prepare your notebook and record your lab work.

Brief Instructions for Laboratory Notebooks

1. Photocopy the pages from your notebook for the TAs to grade.
2. Write your name, perm number, and TA name at the top of the first page of each lab notebook section you turn in.
3. Use the first page as a table of contents, where you list the labs and their page numbers.
4. All lab work must include the date you are working on it.
5. Draw and label a circuit schematic for each part of your lab. The design should indicate all components and connections, in an easy to read format. Include small notes on the design (such as voltages, currents, etc.) which will be helpful for troubleshooting in the lab.
6. Write your notebook as though the reader has not read the Student Manual. That is, don't just answer the question, but also include the question in your writeup. There are many listed tasks that are not specifically questions, but you should still comment on everything you do. The TAs should be able to reproduce your lab based only on what is included in your notebook. TA's are instructed to subtract points if you recopy your lab. You don't have time for this, and this should be a "real" notebook, which documents what and how you did the lab.

Philosophy

The lab notebook should reflect the preparation and execution of a definite plan. When grading your notebook, the TA should be able to read through your lab book and see:

- What you were planning to do.
- How you planned to collect your data.
- The data you collected.
- What you did with the data after you collected it.
- What conclusions you arrived at after you concluded the experiment.

Grading

1. General Guidelines (15%)

- Write only in your laboratory notebook. Date your entries.
- Write in your notebook *as you do your experiment*, **not afterwards!**
- Begin each experiment on a new page.
- Write on consecutive numbered pages in the notebook.
- Use only ink. Do not erase; cross out mistakes with a single or double line.

- Some people prefer to write on right-hand page, and reserve the left-hand page for notes or comments made afterwards.
- Only bound or spiral bound laboratory books are acceptable; The notebook must be larger than $8.5 \times 11''$ so that full size paper can be inserted comfortably. Any loose paper automatically becomes the property of the teaching assistant.
- Neatness helps but is *not* an important factor in the grade. Organization, however, is very important, and will be reviewed carefully.
- A lab notebook is your **daily record of events**; it should not read like a summary, *unless the summary follows the daily record and is in its own section!*

2. Preparation (25%)

- List the experiment title.
- State a general purpose for the experiment in one or two sentences.
- Describe relevant effects and measurable quantities, and estimate the order of magnitude of each one. State what equipment you will need to measure the quantities with sufficient accuracy and precision.
- Sketch the circuit with the parts and connections clearly labeled.

3. Execution (30%)

- Record all data directly into the laboratory notebook as you collect it. Indicate the purpose of each new set of measurements and calculations.
- Be certain that each measured quantity includes a realistic estimate of its uncertainty.
- Write all calculated values in your notebook with the method of calculation clearly indicated. This will usually appear near the data and may be represented in the form of a table. Include appropriate significant figures.

4. Conclusions (30%)

- Briefly tell what you did and how it came out. If there is an accepted standard you can compare with results, explain how your results fit within the values of your calculated experimental error. Writing skills will be considered in grading this section of your notebook.