

Lab Notebook Guidelines

The following is a list of ideas for organizing your notebook. Each of you has their own method of organizing your course notebooks. A laboratory notebook is a somewhat different animal. Its purpose is to document the work you have done in the laboratory. Each of you will develop your own style but there are many parts that are necessary for a good notebook. I'll try to emphasize these and work with you on improving your lab books.

The overall concept is to record what you do as you do it in a way that you will understand and repeat what you did a year from now. It would be even better if someone else could understand what you did but that part is better left to a formal written report. It is easy to trick yourself into thinking, probably subconsciously, "I'll remember that" and not write something down. Err on the side of too much. This requires spending extra time to document things when you would rather be playing Frisbee.

Use a bound book with pages that are large enough to tape 8 1/2 x 11-inch paper into. (Avery 43-684 is the right size.) You will want to put in pages you have gotten elsewhere, for example, graphs from the computer. No loose pages! Tape in secondary notes.

Put your name, address, phone and e-mail on the cover and on the first page. If this book contains your new invention of a whiz-bang widget you want it back if you lose it! Sharpies are good for this.

Leave a few pages blank at the beginning. I use these for a table of contents and for names, phone numbers, useful constants, and general notes that I want to have handy. Use the far back of the book for random notes of a more temporary nature.

Spread out! Use the right hand page for most of your notes leaving the left page for later notes, lists and action items, corrections. The left page is a great space when you have it. You have plenty of room in this notebook for this semester's work.

Enter your notes chronologically even if you are working on several labs at once. You will never be able to guess how many pages to leave for a particular experiment.

For the start of each entry, put a heading and the date and time. Also note who is working with you (like me).

Write down notes before, during and after you work with the equipment. Make sketches of the equipment and how it is connected. Draw schematic diagrams of the circuits. Draw block diagrams of the functional relationships of the parts of the experiments. Do not take notes on separate pages and then copy them in. Learn to have your notebook as your constant companion in the lab. Make it your friend.

Record all measurements in raw form. Then show the conversion arithmetic as a second step. You don't get points for doing things in your head. Write down the units! Units, units, always units.

Do checks of your progress as you work which are recorded in your lab book. This could be quick hand graphs, estimates, or calculations. You can catch glitches, bad data quickly this way. Always question how something might be done better or another way to make sure things are going well. **This is the essence of experimental work!**

Before you leave the lab, take your data the next step by entering it into the computer and doing a quick graph (if appropriate). This helps you catch more problems and see the overall quality of the data. If you don't check you data until later the equipment may not be available for you to work at it again. At the least you will have the overhead of the set-up and calibration. Tape the graphs into your notebook.

Continue to use your lab notebook as you finalize the experiment. Clean graphs, error calculations, comparisons with other experimenters (i.e. accepted values), conclusions, ideas for improvements would all go in. If your notebook is done correctly, the short lab report comes almost directly from your notebook.