

Lab Notebook

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This is what I expect in your notebook, and some suggestions of how to organize it.

General:

- Title.
- Date. Get into the habit of dating every piece of paper you write on. It will save you trouble someday.
- Objective(s) and/or introduction. Read the entire lab before lab time and write your own objective(s) and/or introduction to the lab. If you copy my objectives verbatim, you may not get full credit.

Procedures:

- Describe what you do in lab in such a way that you could repeat the lab again later without referring to a handout. Do not cut-and-paste from the lab handout. You are supposed to be learning how to keep a notebook of your own
- Draw circuit diagrams of everything that you build. A diagram is the fastest and easiest way to describe a circuit. Include parts values. Include equipment and instrument information in at least the first diagram where each instrument is used. (Example: write "Agilent E3631A" next to the voltage supply in your diagram.)
- Describe how you use the lab equipment, especially any new procedures as you learn them. A major objective of your work in the lab is that you learn how to use this equipment.
- Describe the problems that you encounter and how you solve those problems.
- Answer the lab handout questions. You will find many questions sprinkled throughout the lab handouts. Answer in the form of a complete sentence. Same when you are asked to "comment" on something— comment in a complete sentence.

Data:

- Take all your raw data and measurements directly into your notebook. If you process the data, include your calculations.
- List data in tables and plot graphs whenever possible. Tables are especially good when comparing data, such as calculated values v.s. measured values, or measured values obtained from two or three different methods. Sometimes you can compare data as separate graph curves on the same set of axes. When tables and graphs are not appropriate, insure that data elements (measurements) stand out clearly. No one should have to hunt through your write-up for data.
- Draw graphs to scale, using a ruler. Make the horizontal axis the independent variable (the one you change or control) and the vertical axis the dependent variable (the result which you measure). Plot each data point as a dot, an X or a cross. Draw a smooth, averaged line through the points. Generally, the line will not connect all the points, and may touch very few of them. Title each graph and label the axes. You may make graphs on a computer and tape them in your notebook.

Conclusion:

The conclusion is an important part of the lab write-up, because it tells what you've learned from the experiment. Say what you got out of the experiment. Specifically, look back at your objectives, and tell how you met them.

Discuss your results/measurements/data relative to their quality, i.e., how close were they to expected results or to calculated values? How close were measurements obtained by different methods to each other? How accurate were your results? Try to account for differences. How well did circuits work?

A lab notebook may be any notebook that you cannot insert pages into, IE spiral or bound.

Lab Notebook handout