

## LAB REPORT FORMAT

Before getting into details, there are two fundamental rules of lab reports:

- 1) They must be CONCEPTUALLY sequential. If you describe a measurement you did, it is to be IMMEDIATELY followed by the results of that measurement, and then by data reduction, which may include correlation to theory and to other parts of the experiment. This is all to be taken care of before you describe any other experimental procedures.
- 2) It is to be written so that someone who has never done the lab, but who is otherwise comparable to you in training could completely understand everything you did and could go into the lab with no guidance from you and reproduce your results. It should be obvious that as simple a thing as leaving the value of a resistor off the schematic would make this impossible.

### Detailed format of the lab report

- 1. Title.** This should occupy no more than one line in your report, and should be a concise and accurate indication that you understand the essence of the lab experiment you are reporting.
- 2. Introduction.** State the purpose of this part of experiment. In general, there are several parts of each experiment.
- 3. Circuit Diagram.** The diagram should be a complete schematic of the circuit you will be using for the first part of the experiment. List all lab equipment to be connected to your circuit including the manufacturer, model number, and equipment type (Example: Wavetek 142 Function Generator). Do not put the serial number in the report. Indicate the directions of assumed current variables and the polarities of assumed voltage variables. **Indicate all measured resistances, capacitances.**
- 4. Procedure.** State what measurements you are going to take with the apparatus shown in part 3, and how.
- 5. Data.** Report the directly measured data. **Do include units.**
- 6. Data reduction.** Reduce the data.
- 7. Discussion of results: Perhaps the most important section is the discussion of results.** This section should always relate experimental results to theoretical calculations, manufacturer's specifications and discuss discrepancies -- in particular, can the error be justified or can't it? This is the section that indicates to the instructor whether or not you understand the material relating to the experiment.

**Repeat steps 2-7** as many times as there are different parts to the experiment. It may not be necessary to redraw the schematic for each part. If the circuit is changed little enough that the change can be described in one short sentence, the new apparatus can be described in words. Alternately, it may be possible to just represent the circuit as a block after it is

once drawn, if all of the changes are external to that block.

**8. Conclusions.** Discuss problems and make recommendation.

**9. References and Appendix.**

### **Additional requirements**

1) **Pages should be numbered consecutively.**

2) **Graphs (plots) should be numbered (or titled) and plotted on an easily readable scale.**

List experimentally controlled parameters and their magnitudes on the graphs. Specify points of interest. **Refer to all figures and tables by number in the discussion section of each report. Loose pages will not be accepted. Graphs (plots) are placed immediately following your discussion, NOT in the appendix.**

**You are all advised to include careful notes in your own notebooks on any experimental procedures that are unfamiliar to you as the same procedures are used repeatedly throughout the semester but are only lectured on once.** It is not fair for you to expect the instructor to give you a private lecture on some procedure because you forgot it or because you can't understand your own notes.

Reports are due at the beginning of the next lab period, whether or not they are complete. **Late reports will not be accepted!** Work with your partners.

**Students are not to copy information from other lab groups or from previous semester lab manuals. Such acts constitute cheating and will be dealt with accordingly.**