

## ECE 2: Circuits, Devices & Systems

# Laboratory Report Guidelines

Unless otherwise specified, Lab reports are due one week from the completion of each lab, at the start of your subsequent lab session. Your report should be typed. There is no minimum or maximum number of pages required – the basic idea is to report on what you did and what you learned, at the minimum level of detail that is necessary for a technically-competent third-party reader to reproduce your results. You should keep a lab notebook to record all your measurements, but the report should summarize this data in tabular form, should be accompanied by a circuit schematic and/or measurement setup diagram, and where appropriate the data should be presented graphically using Excel or some other similar program. Rough sketches of graphs will not be accepted. Be concise: there is no incentive to submit unnecessary prose. Also, avoid informal and personal expressions such as “I did this” or “we took data”. Finally, your lab report should be your own work. In those rare cases where it is appropriate to include supplementary material from outside sources, CITE THE SOURCE (also include a web link if appropriate).

The report should consist of the following parts:

1. **Experiment Title:** Include your name, the day and the time of your lab.
2. **Introduction and Objective:** Describe the objectives and include theory and background information relevant to the lab experiment. While the background section of the lab instructions is a good source for this type of information, you can and should add pertinent material from lectures, engineering texts, etc. Your goal in this section is to convince anyone reading your report that you have sufficient theoretical background to interpret your lab results. Be concise.
3. **Preliminary Design:** Include this for labs that require some pre-lab calculations or design work. Describe the analyses and results, including intermediate calculations and derivations where appropriate. In some cases it may be helpful to include plots and/or computer-simulations.
4. **Experimental Procedure and Data:** Explain in your own words what you did in the lab. It should be written clearly enough so that a knowledgeable engineer who reads your report will understand what you did, without having to consult the lab instructions. It is important to include circuit diagrams of the circuits studied. For each step, include summary data that your group recorded during the experiment, preferably as plots or figures with appropriate captions.
5. **Discussion, Analysis, and Conclusions:** Use this section to apply the theory that explains your results. Why did you obtain the results that you did? Were there discrepancies between your expectations and your actual data? Analyze your data to explain any unusual effects. Sum up the important concepts and principles discovered in the lab, and how the material might be used in practice.
6. **References** List references here; could be a book or journal reference or a webpage.

Some laboratory sessions span more than one week and will not require a report until the lab is fully completed. Use the extra time wisely: plot and analyze your data and jot down conclusions while the observations are fresh in your mind, and if needed, make a “to do” list for the report the following week.