

**ESE 1500**  
**University of Pennsylvania**  
**Electrical and Systems Engineering Department**

*General Guidelines for Writing the Lab Reports*

In the ESE 150 Lab, Lab 6 will require a formal lab report to be written and submitted individually. This will go beyond the normal weekly lab result submissions. The main purpose for the report is to communicate results of your scientific endeavors to others and to enable them to duplicate the work in a straight-forward manner. A secondary purpose is to develop your familiarity with lab reports as you will need to write throughout your time in the program.

All lab reports must be typed and submitted through canvas in PDF format ONLY. **Please use 1.5 or double-spacing, and 12pt font.** It may save you time to have a template that you follow for each lab, according to the guidelines described below. You have to include screenshots of any meter/oscilloscope readings, Matlab/Arduino code. The lab report does not need to include step-by-step details, but it should show that you have a good understanding of the lab and the associated concepts. Also, the lab report should be complete, where all information requested should be in the lab report. The listing of the lab-specific report requirements can be found at the end of each lab assignment.

For each part of the lab, we will expect an “Experimental Setup and Procedures” section. *Cut-and-paste copying of the lab instructions is **not** an acceptable way to report the procedures you used in the lab.* In many cases, what you want here is less detailed than the lab instructions (which often do include step-by-step details). At the same time, for some of the experiments you need to do for Lab 6, the lab doesn’t tell you exactly what to do, so your description needs to go beyond the detail in the lab handout to specify how you went about solving the problem or performing a particular experiment. When describing the code you’ve written, provide a high-level overview of how the code works, not a line-by-line narrative; your description should make it easier to see the big picture and rationale for the code.

The length of a typical report is dependent on the amount of design done in the lab and, of course, the number of screenshots that you have. Generally, reports are within 5--10 pages. If you have a large amount of “data” to submit, you may wish to include Appendices and refer to them from the main report itself, i.e. – Long listings of Matlab code or Arduino code as an example.

The reports will be evaluated on their technical accuracy as well as on the quality of writing. This includes overall organization, presentation of graphics and tables, grammar and wording, and overall clarity of writing. A rubric that summarizes the key points that will be used to evaluate the writing will be posted.

### Some important points:

1. Use a software to draw all your schematics (circuitlab.com is helpful for any circuitry). **Do not hand-draw circuits or diagrams or copy them from the lab documentation.** It is important that you provide clear schematics (easy to follow) that other engineers can follow when attempted to duplicate/build your work.
2. Use Word's equation editor to generate equations, as opposed to typing them in text form. Example Ohm's Law:  $i=v/R$ , should be:  $i = \frac{v}{R}$ . *You may also use LaTeX if you are feeling ambitious!*
3. The report should be written independently, different from your lab partner's work. You may share data (as one would expect), but format that data and interpret it on your own. The formal lab writeup is an intellectual product; copying parts of the writeup from anyone (including your partner) is a violation of [Penn's Code of Academic Integrity](#).
4. All lab reports will be submitted via canvas in PDF format ONLY. Dates for the submission will be listed on the course syllabus.
5. **Look at the lab-specific rubric, that will be posted on canvas for information on how your report will be graded.**