ECE481 Lab Report Guidelines

Each lab has specific requirements given in the lab procedure. The lab report should address the specific requirements, and follow the general guidelines described here. Be sure to double-check the *entire* procedure, to make sure you have not missed any portion where a specific result, plot, measurement, or discussion is required.

For this course, lab reports *do not* need written introduction, methods, conclusion, or other discussion not explicitly requested in the lab procedure. However, lab reports do need to give a clear and complete listing of results and required discussion. Reports should be typed and professionally formatted.

Specifically, for each Task in the laboratory include all of the components that apply to the Task:

- **a)** Reference to the Lab Task, e.g. "Lab 1, part A.1.1. Square Wave"
- **b)** All relevant analysis and simulation results. Include any discussion necessary to convey how you arrived at your results.
- **c)** Detailed circuit diagrams of experimental circuits *annotated with relevant signal names, component names and values*. You may use LTspice or any other software of your choice to produce circuit diagrams.
- **d)** Experimental results:
    i. Scope waveforms (screenshots) should be annotated with signal names matching the signal names in the schematics, and scales (volts/div, and seconds/div), as well as measured important features of the waveform (such as peak value, peak-to-peak value, time delay, etc.)
    ii. Numerical results (you may use Excel) should be presented in graphical format, with clearly labeled axes and important features of the plots. A table of measurement data tables should be included in an Appendix at the end of the report.
    iii. Calculations, data analysis, comparisons to simulation results, and comments related to the experimental results. Each plot or graph in the report should have a title or caption that clearly specifies what is shown in the figure. It is not sufficient to give references to parts of the lab procedure. For example, do not just say "Lab 1, part A.1.1"; give a full caption: "Square-wave voltage waveform generated by Agilent 33521A waveform generator: minimum value is $V_{min} = 0$ V, maximum value is $V_{max} = 2$ V, frequency $f = 1$ kHz, duty-cycle D = 50%"
- **e)** Discussion: for any discussion requested in the lab procedure, give a complete written response to the prompt, including references to figures or additional written calculations as necessary to address the topic. Additionally, even if not explicitly requested in the lab procedure, include discussion for any results which are out of line with your expectations.

In general, in all sections of the lab report, be neat, brief and precise. Quality is much preferred to quantity. Your audience is fellow engineers and you do not want to waste their time with irrelevant data, verbose statements, or incomplete schematics.

Messy reports will be returned without grading and will receive zero credit.