

General Guidelines for ECEN 3233 Lab Report

James E. Stine
Associate Professor
Electrical and Computer Engineering Department
Oklahoma State University
Stillwater, OK 74078, USA

1 Overview

Each group of students has to submit their own report for each laboratory session. The main purpose for the report is to communicate the results to others and to enable others to duplicate the work in a straight forward manner. As I indicated in the beginning of the semester, you should probably have a lab notebook to record your results. The lab notebook is usually a small book that has sheets that cannot be torn out of it. If you are familiar with cheap composition books sold in supermarkets, these books are similar to what you should be looking for. However, expensive lab notebooks (i.e. greater than \$5) should be avoided like the plague. The best notebooks are probably ones that are small and can be carried with you easily. Of course, lab notebooks are completely optional. On the other hand, the lab notebook is for your own benefit and record keeping.

When preparing the lab report you can use a word processor (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 printouts of all logic schematics and simulated waveforms. The lab report does not need to be step-by-step detailed, but should show that you have a good understanding of the lab. Also, the lab report should be complete, where all information requested should be in the lab report. The listing of the report requirements can be found at the bottom of each individual laboratory page.

Reports are to be either neatly hand written or typed (or a combination of both) and should contain the following information. A report should be concise but thorough and should be something that could be read easily by any of your fellow students. The length of a typical report should normally not exceed 5 pages. The lab report is due at the start of the next lab.

- Title, date and name of the student.
- The following format is a good guideline for what needs to be included. There is a separate document that I created several years ago which documents the ideas a little more. I would encourage you to read this other document for your other classes, since most people never really told me what to put into a lab report. This document is to give you a general idea what to include inside your lab report. The other document is only for your information.
 1. Pre-lab: (15 points - these are usually given on the DLD web page and should be done by each student) Usually, this includes schematics (if appropriate), a brief explanation of the circuit and derivations (or optimizations/simplifications, K-maps if applicable) to the questions. However, questions which were submitted on-line need not to be included in the report. Normally, the pre-lab can be completed in 15 minutes or less.
 2. Introduction (10 pts) - Give the goals of the lab experiment.
 3. Theory of Operation and explanation of the design (60 points) - For this part, give a brief discussion of the theory of operation, including schematics and equation used, etc. This is of particular importance for the design oriented labs and mini-projects. You should also explain the schematics involved in your design. This is probably the most lengthy and crucial part of your document.
 - (a) Brief description of the lab experiment.

- (b) Schematics or HDL of the circuit (from Xilinx schematic entry tool). Put your name and date on each page.
 - (c) Simulated waveform.
 - (d) Discussion of the results indicating that the circuit functions properly. It is not good enough to just give the simulated waveform. It is up to you to show that this waveform correspond to what you expect (do not say “The simulation shows that the circuit works properly”). You need to make it clear to the reader that the circuits works properly! One convenient way it to give a truth table and indicate that for each entry the corresponding values given by the logic simulator by labeling or anotating the simulated waveforms. Include also a reasonable detailed discussion of the results.
4. Conclusion. (10 points) - This is an important part of the report. The conclusion should contain a summary of the results. Are the goals of the lab fulfilled? If not, explain why.
 5. Sign and date your lab report.
 6. Neatness, organization and presentation: (5 points)