ECE 318/518
Digital Design

Laboratory Reports

1. Lab reports should be written up in a word processor and should begin with a cover page containing the lab title and number, date, author, and the name of your lab instructor.

2. The report should have the following sections (note that the lengths are based on using 12 point font and assuming single spacing):

Abstract

The purpose of the abstract is to provide a brief overview of the report. In your own words, state the purpose of the laboratory exercise, the basic concepts covered, a very brief (one or two sentences) overview of the procedure followed, and a brief summary of the actual results. Be specific about results - do not use phrases like "it worked". **Be very careful not to copy text from the lab handout.** The abstract should be one or (at most) two paragraphs of text.

Introduction

The introduction should introduce the reader to the topic of the lab and provide any technical background material that is required to make the laboratory report complete. Usually the concepts in the prelab are appropriate for the introduction. The introduction should discuss concepts rather than procedure or results. Be sure to include all figures, equations, and tables necessary to understand the rest of the lab report, **but do not refer to the results of the lab here**. Also, do **not** simply refer to your prelab. A typical introduction is about 1-2 pages of text and figures.

Procedure

Although the procedure section of your lab handout may be very long and detailed, the procedure section of your report should be concise and only include the major parts of the procedure. You should summarize each of the major parts of the procedure in your own words. Please write this in paragraph form rather than list format. You do not have to include all the detailed instructions. Include the procedure of any exercises that are requested at the end of the lab handout. The procedure section should be a few paragraphs and no longer than one page. Remember to use past tense since you are reporting on the procedure you followed.

Results

In this section you should include the results of the procedure, including the exercises at the end of the lab handout. The results section will have subsections if there are multiple results to present as this makes the presentation more clear. The results section will typically include VHDL code, equations, delay results, circuit diagrams, simulation commands and waveforms. **All results must be explained and discussed - this means you should answer the question "are these results what one expects or predicts?" with a complete answer**. It is best if the discussion is next to the figure or table illustrating the result in the report. Results that span more than one page, such as a VHDL program, should be included at the end of the report as part of the appendices. You should number and title each figure and table, including those in the appendix. Use the numbers to refer to these results when you discuss them. If the figure or table is included in the appendix, also refer to the page number where the reader can find it.

Conclusion

In this section you should write about the concepts that you learned in the laboratory and how they relate to other aspects of the course or digital design in general. If you experienced problems or obtained data that was incorrect, here is where you might elaborate on the causes and ideas for solutions. You MUST refer to your results and relate them to the concepts you learned.

Appendices

Long report files and other material that is referred to in the report, but too large to include within the report body, should be attached. Also, attach your original prelab work and the lab handout to the end of the lab.

3. Your report should be clearly written. It should have a logical flow so that the reader can understand what you did and what the results were.

4. There is both a writing and a technical component to the grade awarded for each lab report. The writing component is graded on clarity, conciseness, organization, grammar, and completeness. The technical component is graded on the correctness of results, the level of understanding exhibited in your discussion of the results, and on how complete the results are.

5. Remember that you are reporting on what has already been done - the past tense should be used. Avoid using first person unless absolutely necessary.

6. Technical reports include only "figures" and "tables". Do not use terms like "picture", "appendix", or "code" to label illustrations or tables. All figures and tables must be numbered and titled immediately after the figure or table, centered on the page. Include figures and titles **with** the text as much as possible.

7. Number all pages, including appendices.