Lab 1 – Write a Lab Report

Prerequisites
There are no digital design knowledge prerequisites for this lab.

Objectives
Since we have not started with digital designing yet, this week you will write an engineering report explaining a concept rather than a report explaining a new design. The format will be identical to what is expected in future reports and the grading will be very similar. Understand that your grammar, spelling, sentence structure, report flow, and formatting are important grading factors in this course. While this is a digital design lab, CSE2300W is a “W” course at the University of Connecticut. To complete this requirement, you must spend a portion of this course writing reports. However, this is a 1-credit lab component which means that the time you spend should be on learning the essentials and not doing busy work. With that in mind, the goals for this lab are:

- To clarify the report writing expectations and provide extensive feedback on your first report.
- To familiarize you with the computer lab, make sure you can log into the computers, have access to word processing and printing facilities.
- To get you adjusted to the pace of the course.

Background
As a professional engineer, you will find communications to be critical in your field. For example, you will be required to write documentation on a job so that the next engineer who looks at your work can understand what you have done. Even more important than what you did, the person reading your work must understand why you made the choices you did. If you are presenting a design to a group, you will need to explain design decisions you have made and be able to question decisions of other members if you do not understand them. You may be asked to review a design where you will need to write comments and suggestions that can be understood by the author. As a group member, you may have a great idea how to improve a co-worker's design, but you must be able to clearly express this to the rest of the group.

In this course, you will have the opportunity to work on both of these skills. For many labs you complete, a formal report is required. In addition, for circuits that you build, you will be asked a few questions about your design and implementation during your hardware assessment.

Specifications
For this lab, you will be writing your first lab report. For many of you, it is also your first engineering report. You may wish to set up a blank document for yourself as all subsequent reports will be in the same format. I recommend setting up the cover page, the section headings, and anything else that can be prepared. Then save this document as a template. Before you start a new report, copy this document and rename it to the then current project. Spend some time on
learning the word processing software you will be using.

Since you have not started designing digital circuits yet, this report will be an explanation of a topic to a new student at the University of Connecticut. Select a topic of interest to you, which you are knowledgeable of, and can explain in approximately 1000-1500 words. An example of an abbreviated report is at the end of this page.

The report should be formatted as follows.

1. Margins: 1” on all sides
4. All reports must be typed. No hand written reports will be accepted.
5. The reports should be your independent work and written in your own words. You may NOT quote verbatim from the CSE2300W site or assignment.
6. A report should have at least 1000 words.
7. At least one graphic included in the report - the cover sheet graphic is sufficient
8. A typical report in this course has the following sections. Some labs may require a few additional sections.
   8.1. **Cover Page**: course title, lab title, your name, and section number must be present.
   8.2. **Objective(s)**: This should be a small paragraph not exceeding 3-4 sentences to point out the main purpose of the assignment that you did. In this case, what is being taught or explained in the following paper.
   8.3. **Background and theory**: This section talks about the background and/or theory of the assignment in a little detail. Remember that you do not have to write the procedure in here for you have a different section assigned to talk about that. From the background/theory section the reader should be able to decide if the bulk of the paper will be of interest or importance. This section should also make it clear what information you are assuming about their background.
   8.4. **Design and implementation**: This section describes your design. Explains what the difficulties are and how you solve the problems and achieve your design goals. Appropriate figures should be drawn if necessary.
   8.5. **Results**: Assuming the reader has successfully implemented your design, describe what they should get as results. Very often, results are presented in tables or figures.
   8.6. **Discussion and conclusion**: This section includes the conclusions that you draw after doing the project, whether or not you were able to achieve your goal, etc. It summarizes what the reader should have learned, what are the advantage and weakness of your design, how your design can be applied to future applications, and what lessons you have learned.

**Deliverables**

You should work individually on this lab. You need to submit a printed copy of your report with cover page to your TA, on or before the due date. Please make sure your report has all the required sections, which is the whole purpose of this lab.