

# ESE 201

## Guidelines for writing the Lab Reports

Each group of two students has to submit a report for each session. This is separate from the notebook. The main purpose for the report is to communicate the results to others and to enable them to duplicate the work in a straight forward manner. On the other hand, the lab notebook is for your own benefit and record keeping. Write down observations, circuits you designed, results, etc. You can refer back to it during future labs or during the final exam.

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 lab's page. The length of a typical report should not exceed 5 pages.

*The lab report is due at the start of the next lab.*

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 can be found [here](#).

## General Outline and Content

### **Title, date and name of the students.**

Use a cover page with the above information.

### **1. Pre-lab**

For the questions which are not submitted online include 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.

### **2. Introduction (10 pts)**

- This should include the goals of the lab experiment.

### **3. Experimental Design (30 points)**

- Give a brief discussion of the theory of operation, including schematics and equations 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.

- Explain the design of the circuit/system (for design oriented labs)

#### **4. Experimental Results (40 points)**

This includes the following components:

- a. Schematics of each (macros) and overall circuit (from Xilinx schematic entry tool).
  - Give schematics descriptive names.
  - Label inputs and outputs.
  - Each schematic should have your name and date
- b. VHDL or Verilog Code
  - Include a brief description of the module that the code implements
- c. Simulated waveforms.
  - Show key simulations to verify the proper operation of the circuit.
  - Annotate or label the waveforms so that the reader understands easily what is being presented.

This section should make it clear that the circuit functions properly. It is not good enough to just give the simulated waveforms and say: "*The simulation shows that the circuit works properly*". It is up to you to present the results in such a way to make it clear to the reader that simulation corresponds to what you expect the circuit to do (according to the specs and the design outlined in the section "Experimental Design"). One possible way is to give a truth table (derived from the waveform) and compare simulated with expected results. If the results are unexpected discuss this in the next section on "Discussion and Conclusion."

Note:

- The write up should be presented in continuous prose and not in a list form.
- Passive voice and past tense are the norm; however, use of 'we' is acceptable if it increases clarity.

#### **5. Discussion and Conclusion. (20 points)**

This is an important part of the report.

- Include a discussion of the results.
- Relate the results to the objectives of the lab
- Are the goals of the lab fulfilled? If not, explain why.
- The conclusion should contain a summary of the results.

#### **6. References**

Include references if appropriate.

*Sign and date the entry (you and your partner).*