EE 231 Lab Syllabus

Objectives

This lab is designed to augment the Digital Electronics class. Concepts from the class, which include Boolean algebra, logic gates, sequential digital design, finite state machines, etc., will be practiced in the lab on the Xilinx Spartan-7 FPGA board. Lab work will primarily center around Verilog HDL programming within Xilinx's FPGA programming software, Vivado.

Instructors/TA's

Dr. Rene Archiga - Instructor
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Christopher Ramirez - Lead TA	Isaac Bamonte - TA
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Tyler Buys - TA	Duggan Matson - TA
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Grading

Grading Breakdown:	(%)
Prelabs	20%
Lab/Lab Notebook	60%
Final report	20%
Total	100%

Lab/Notebook Breakdown:	(%)
Introduction	20%
Methods	20%
Results	20%
Conclusion	10%
Demonstration of Success/Signature	30%
Total	100%

Due Dates/Late Policy

Pre-labs - All pre-labs are due at the beginning of class. There will be a 15 minute grace period during the initial lecture. Any paper turned in after this period will be penalized by 50%. No pre-labs will be accepted after the end of the lab period or there is reasonable suspicion of copying the graded results of another peers pre-lab.

Labs - All labs are due at the end of the lab. A lab may be turned in at any point two weeks after the due date for 70% of the original grade. No late lab submissions will be graded after the two week late period.

Each student is responsible for informing, in writing, the lead TA and instructor regarding absences and tardiness beforehand. One grace week will be given during dead week (Dec. 3-7) where any single lab may be turned in without penalty. No pre-labs will be accepted. Unless proof of an emergency can be produced, the above due dates and penalties will be held.

Lab Notebook Expectations

The Lab Notebook consists of 5 sections. The student's lab notebook is to be understandable from a layperson's perspective. You should be able to go back in 5-10 years and understand two basic things about each lab; what the objective/purpose of the lab exercise was, and what was done in order to get to the final outcome for the lab.

Introduction - The introduction should introduce the reader of the notebook to the project or problem being addressed. Details should include the purpose of the results, sufficient overview of the methods, a summary of the problem and why it is applicable to the project, etc. Diagrams or flowcharts may sometimes be necessary to explain the introduced concepts.

Methods - The methods section should detail a specific approach to solving the problem. A detailed description should include diagrams or flowcharts. This does not necessarily entail an action-for-action tutorial to use the program. A novice user of Verilog/HDL should be able to reproduce your results from your notebook.

Results - The results section should follow directly from the methods section. Quantitative diagrams and/or numbers are required. Thoroughly commented code is required to be included (print and paste code). If no successful results are obtained, a quantitative demonstration of your current progress will receive partial credit.

Conclusion - The conclusion should briefly restate the purpose and results of the project. Significant results should be quantified. Do not say whether your liked the lab or not, such comments, smiley or frowny faces, explosions, or the like belong in the margins. In short, the conclusion summarizes the purpose, methods used in completing the lab, any problems encountered during the lab, and any results obtained from the lab.

Demonstration of Success/TA Signature - Lastly each student is required to obtain a signature from one of the TAs on duty during their lab section. To receive the final signature for each lab, the student must demonstrate their project operates as expected. Before each lab, during the lecture portion, the TAs will outline what is required to obtain a TA signature.

Safety

When working with live electronics, soldering irons, or other laboratory equipment, students are required to wear their safety goggles.

Counseling and Disability Services

Reasonable Accommodations - New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. To schedule an appointment, please call 835-6619.

Counseling Services - New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.

Academic Honesty - New Mexico Tech's Academic Honesty Policy for graduate students is found starting on page 79 of the NMT Graduate Catalog. You are responsible for knowing, understanding, and following this policy. NMT Course Catalog 17-18

The Student is responsible for knowing, understanding, and following this policy.

Respect Statement - New Mexico Tech supports freedom of expression within the parameters of a respectful learning environment. As stated in the New Mexico Tech Guide to Conduct and Citizenship: "New Mexico Tech's primary purpose is education, which includes teaching, research, discussion, learning, and service. An atmosphere of free and open inquiry is essential to the pursuit of education. Tech seeks to protect academic freedom and build on individual responsibility to create and maintain an academic atmosphere that is a purposeful, just, open, disciplined, and caring community."

Important Notice: The instructor keeps the right to make necessary changes for this Course/Syllabus during the semester.