

University of Wyoming
EE/COSC 2390 Digital Systems Design
Spring 2004
Laboratory Policies

Introduction: The EE/COSC 2390 laboratory is an integral part of the Introduction to Digital Systems Design. The student will be provided with an opportunity to develop design and debugging skills using contemporary SSI, LSI and VLSI hardware as well as a top-of-the-line integrated software suite for design entry, simulation, and synthesis. The student should acknowledge that most, if not all, labs will not proceed smoothly from start to finish. It is expected that the student will invest a significant amount of time and critical thinking to develop the skills for using the tools available in lab, and a portion of this time will involve exorcising the gremlins in the software and hardware. The Teaching Assistants will act as experienced users of the tools, however they are not expected to “solve all problems for all students.” Finally, the student should not consider the lab to be “guaranteed points.” In fact, the lab will be very challenging, and it is expected that not everyone will receive full marks for each lab exercise.

Attendance Policy: Attendance at each and every lab session, at your assigned lab time, is absolutely required of all students. Failure to satisfactorily complete just one lab exercise will result in failing the class (see ECE Department Policy, available at the Department Office). If for any reason you must miss an assigned lab time, you must obtain permission to do so from your Teaching Assistant **before the time of your assigned lab meeting**. An un-permitted absence which is not accompanied by a University Excused Absence Slip (available from the Office of Student Life) will result in a grade of F in the class.

Grading Per Lab Exercise (except final project):

Prelab	10 points
Lab Notebook	2 points
Procedure	8 points
Quiz	10 points
<u>Total</u>	<u>30 points</u>

Satisfactory completion of each lab exercise will be based upon receiving a grade of at least 15 out of the possible 30 points. Re-doing a component of a lab exercise is the responsibility of the student, arranged with the permission of their Teaching Assistant. Note: The final project will be worth a total of 60 points, no quiz.

Bring to Lab: One of the objectives of the lab is to develop documentation and communication skills typical of a digital design laboratory. Toward this end, each student is required to obtain, bring to lab, and utilize the following items:

- (1) The EE/COSC 2390 Laboratory Manual for Spring 2004, available at the campus bookstore.
- (2) An appropriate Lab Notebook (a bound *Composition Notebook*, either with college-ruled or square-grid pages, is an inexpensive and satisfactory solution). See the Introduction section of the Laboratory Manual for more detail.
- (3) A sturdy folder or binder for any loose-leaf papers. This should be labeled and utilized for only EE/COSC 2390.

These items must be brought to each lab session, and the developing content of each should be as follows:

Laboratory Manual

Each Lab Exercise will be introduced via the instructions contained in the Laboratory Manual. The procedure steps suggested for each Lab Exercise need not be transcribed into the Lab Notebook, however, any significant variation from the suggested procedure *should* be described therein.

Lab Notebook

- (a) **Prelab:** each lab exercise has an associated Prelab which must be completed by the student before lab time. Prelabs will be graded at the start of the lab session, and only Prelabs which are permanently contained (written, taped, glued) into the Lab Notebook will be accepted for grading. Looseleaf Prelabs will receive a grade of zero. Schematics should be neatly drawn (use a straight-edge if drawing by hand) and all features clearly annotated. Your Teaching Assistant has only one minute per student to grade the Prelab, so this work must be very carefully and cleanly entered into the notebook. The student will not have time at the beginning of the lab session to complete the Prelab as they will be taking a quiz at that time.
- (b) **Corrected Prelab:** any corrections to the Prelab (computations, design changes, etc.) must be permanently entered into the Lab Notebook in a manner which retains the original Prelab while clearly indicating the correction.
- (c) **Schematics/HDL Code/Timing Diagrams:** printouts of any schematics, pertinent “software modules” and graphical outputs associated with the design and simulation should be permanently contained in the Lab Notebook. To accomplish this task, you will have to investigate the sizing and presentation features of the printer output tools available with the lab software. Skill with a photocopier might come in handy as well.

- (d) **Annotations:** appropriate hand written annotations should be provided on all computer generated outputs to aid in summarizing the information provided.
- (e) **Hardware Implementation Details:** a summary of the results of any hardware implementation and testing should be stated clearly.
- (f) **Lessons Learned:** each student should summarize, in writing, any new facts or skills learned in the completion of the lab.

Folder or Binder

- (a) **Lab Manual:** at the student's option the Laboratory Manual may be attached or clipped inside the folder or binder.
- (b) **Graded Lab Quizzes:** at the beginning of each lab session, the Teaching Assistant will administer a quiz based upon the principles of the lab exercise completed the previous week.
- (c) **Any Other Looseleaf Supplementary Resources:** items should include this handout and other handouts provided in lecture or references discovered on the web.¹

Notebook Grading: The Teaching Assistant will examine the notebooks at the start of each lab session to award a cursory grade for format and completeness. The notebooks will also be collected at the end of the semester for a more thorough examination and grading to be incorporated into the final semester grade.

Computing Tools / Availability: The Xilinx software utilized in the laboratory is also available for student use in the open computer laboratory (EN 5038). Students are encouraged to work outside of scheduled lab time to gain familiarity and expertise with the software. One readily conceivable reward is that a full-point Prelab is one that has computed confirmation of its correctness. Note, however, that you must attend your regularly scheduled lab in order to have Prelabs graded, Quizzes administered, and Procedures (with hardware implementation, typically) confirmed by the Teaching Assistant.

Issues of Academic Dishonesty: Each student is expected to independently complete and submit their own Prelab efforts. Lab partners should share in the decision of "what to implement" in lab. Changes to the Prelab effort must be clearly indicated in the Lab Notebook in order to justify the simulation and hardware verification obtained in lab. Copying of another individual's work (electronically or by other means) and representing it as one's own efforts is considered to be academically dishonest and will be dealt with according to the guidelines of the University.

Student/TA Info

Student Name and ID: _____

Lab TA: _____

Lab Section: _____

Computer Account: _____

Lab Partner: _____

¹You might consider browsing through the website provided by the manufacturer of our software tools. Lots of good stuff can be viewed at <http://www.xilinx.com>