

UNIVERSITY OF BRITISH COLUMBIA
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
EECE 353 - Digital Systems Design
May – June 2015
Laboratory Information

All Labs will be held in MCLD 358

A significant part of this course is a hands-on lab. The lab will give you a chance to try out the concepts discussed in class, and actually build and test working hardware. Even if you normally shy away from lab work, I suspect that you will find these labs interesting and worthwhile.

Lab Format Overview

Under the compressed summer schedule, there will be one lab session each week (6 lab sessions in total) **starting on the first week of term** (week of May 11th – May 15th 2015). Each lab session is 4 hours long. During these 6 weeks, you will work on 6 lab assignments.

Each session will have the following format (except the first week. More info below*):

1. First 2hrs (“Marking”): The first half of each lab is only for lab demos (marking). You must come into the lab **ready to be marked**. The TAs will need to focus on marking, so will not have time to help you with your assignment. Marking will be done according to a schedule organized by the TA during the previous lab session. If you miss your scheduled time, you can only be marked if there is available time in the first 2 hours of the lab. You **cannot** demo in a later/different lab section/session.
2. Second 2hrs (“Preparation”): The second half of the lab is intended to be where you work on next week’s tasks. TAs will be available to help you if you run into problems. Marking will only be done if there is time (helping students will have a higher priority). During this time, a marking signup sheet will be posted, and you should reserve a time to be marked during the next week.

* Exceptions:

Week 1. During the first week of labs (May 11th – May 15th 2015), you will work on the first lab assignment **AND** demo it to the TAs. You will also be able to start working on the second lab assignment in preparation for demo during the second week. Don’t worry; Lab 1 is a “warm-up” lab. It is a refresher on the tools that you will use throughout term. You would have used most of these tools before in EECE259. You can do almost all the work before arriving to your first lab. **Be prepared to complete the lab during your first session.**

For most labs, you will have to do some work outside of the lab sessions. Attendance is only mandatory for the demo portion of your lab session. However, it is highly encouraged that you make use of the remaining lab time to start your next assignment, and to get help from the TAs. TAs will not be able to help you much outside of lab sessions. You can post questions to the Connect discussion forum and we will try our best to help, but we have found that it is easier to apply this help in person during the labs. You most certainly cannot finish most lab assignments if you don’t start ahead of time. This is especially true under the compressed summer scheduling.

Lab Assignments Overview

Each lab assignment will have one or more deliverables that must be demoed to the TA. *Treat the TA as a client to whom you are trying to sell a product*; it is up to you to come up with a suitable demo that will convince him or her that the design works! The TA will ask questions regarding the lab and your understanding of it.

In addition to the demo, you must submit any code that you wrote to the Connect site by 11:59pm the day of your scheduled lab. We will be using these submissions to look for unauthorized collaboration in the assignments; suspected cases will be investigated further and reported to the Dean's office for further consideration.

Labs will be done in groups of two. You can form your own pairs. If you are unable to find a partner, the TA can pair you up during the first week.

Most labs will have "Challenge Tasks". Challenge tasks are tasks that you should only perform if you have extra time, are keen, and want to show off a little bit. Challenge tasks will typically only be worth 1 mark, but will be far more work than the other tasks in this lab. If you don't demo the challenge task, the maximum technical score you can get on labs with challenge tasks is 9/10 (which is still an A+). See the section on Marking Scheme for more info.

Lab Schedule:

Week 1 (May 11 - May 15)

Work on Lab 1 and Demo Lab 1 deliverables. Students may also start work on Lab 2

Week 2 (May 18 - May 22)

First 2hrs - Demo Lab 2

Second 2hrs - Work on Lab 3

Week 3 (May 25 - May 29)

First 2hrs - Demo Lab 3

Second 2hrs - Work on Lab 4

Week 4 (Jun 1 - Jun 5)

First 2hrs - Demo Lab 4

Second 2hrs - Work on Lab 5

Week 5 (Jun 8 - Jun 12)

First 2hrs - Demo Lab 5

Second 2hrs - Work on Lab 6

Week 6 (Jun 15 - Jun 19)

First 2hrs - Demo Lab 6

Second 2hrs - End early!

Lab Equipment

All lab assignments will require the use of an Altera/Terasic DE2 board. The boards are available for purchase at \$125 each (heavily discounted by Altera and Terasic for your personal use). Many of you will already have one from EECE259. We will have enough boards available during the lab sessions, but you **will not** have access to these outside of lab

hours. If you don't have one, it is encouraged that you get one so that you can work on the labs during your own time. You can purchase these boards at MCLD112B.

Policies on Missed Labs

If you know ahead of time that you will miss a lab for a medical reason, a job interview, or another approved reason you must contact the instructor *as soon as possible*. If you fall sick on the day of the lab, contact the instructor immediately on your return to university (or by email before you return), so alternative arrangements can be made. **Do not show up to a lab section other than your own** without receiving permission; if you do, the TA will not allow you to complete your lab and have it marked. Also note that having a lot of midterms, assignments or projects due is *not* a valid reason to reschedule a lab (everyone has lots of midterms, and it is not fair to others if I give permission to one person).

Marking scheme for Labs

Your mark for the lab portion of the course will be computed from all 6 lab assignments. Each lab will be weighted equally. Your mark will be based both on the quality of your solution, as well as your ability to explain your solution to the TA. Specifically, 10 marks will be allotted to the technical deliverables (breakdown will be provided in each lab assignment), and 5 marks will be allotted to the quality of your presentation, yielding a total of 15 marks for each lab.

For the presentation marks, don't stress too much. We will be generous. The goal is to encourage you to put a bit of thought into how you communicate. When you work in industry, communication becomes an incredibly important skill. Luckily, it is a skill that can be improved with practice. And so this is just a chance for you to start practicing.

Policies on Extra Lab Time

Unfortunately, the university is unable to hire TAs to work in the labs outside of scheduled lab hours. Thus, outside lab hours, you will not have access to the department's Altera boards (the software will be available on all departmental computers, and you can install the software on your own computers). Also, due to the limited lab hours available, and to be fair to everyone, you **cannot** attend more than one lab section per week, even if available slots in a lab section are available. Attempting to get "extra time" by attending two lab sections is a form of academic dishonesty and will be dealt with as such.