

1 Overview

The SOEN228 Lab is a project-oriented lab. The focus of the lab is to encourage learning in the computer hardware environment not commonly seen by software engineers. By doing so, students will gain knowledge of how a computer works by assembling components. This will lead to a working, hand-built computer. The work is done by using breadboards and TTL logic integrated circuits. Students will be working in pairs and writing group reports.

The lab is divided into two components:

1. Preliminary Exercises

These lab experiments aim to provide students with a means of learning how to use the lab equipment. Additionally, students are to build simple logic functions and memory units.

2. The Project Computer

The project computer is a simple 4 bit computer with a reduced instruction set. Students are to build the computer, piece by piece, with provided logic gates and instructions from the lab demonstrators. This project spans the majority of the semester.

2 Grading

The SOEN228 Lab is graded out of 15 points.

Lab Report 0: 15%

Lab Report 1: 15%

Lab Report 2: 15%

Lab Report 3: 15%

Final Report: 40%

3 Reports

Lab Reports (including the Final Report) are to be done in pairs with your lab partner. Submissions will be through Moodle and must be submitted as a **.PDF file**. Reports will be due every week unless stated otherwise. Please refer to the schedule for more information. The Final Report is a detailed report on the project and is generally due shortly after the SOEN228 final exam. For more information, please see the *SOEN228 Lab Final Report Guidelines*.

No late submissions will be accepted without reasonable cause. It is the responsibility of the students to ensure their work has been submitted on time.

4 Lab Schedule

Here is a rough schedule of how the lab schedule should proceed in a semester.

Session	Lab Experiment	Student Submission Deadline
1	Lab 0	
2	Lab 1	
3	Lab 2	Lab Report 0
4	Project 0	
5	Project 1	Lab Report 1
6	Project 2	
7	Project 3	Lab Report 2
8	Project 3	
9	Project 4	Lab Report 3
10	Project 4	