CSE332L Computer Organization & Architecture Lab
Lab Course Outline
North South University

Course Description

This course introduces students to the basic concepts of computers, their design and how they work. It encompasses the definition of the machine's instruction set architecture (ISA), its use in creating a program, and its implementation in hardware. We will study modern computer principles using a typical processor and emphasize system-level issues, understanding process performance, and the use of abstraction as a tool to manage complexity. We will employ both hardware and software tools to realize a small processor of our own.

List of Experiments

Lab 1	Design of a 2-bit Logic unit
Lab 2	Design of a 2-bit Arithmetic unit
Lab 3	Design of a 4-bit Binary Multiplication Unit
Lab 4	Design of an ALU control
Lab 5	Design a Register File
Lab 6	Design a single cycle Datapath
Lab 7	Design a Pipelined Datapath
Lab 8	Design of a 4-bit Binary Up-Down Counter

Lab Marks Distribution

Total = 100
1. **Attendance – 20%**
2. **Lab Performance (evaluated on each class) – 20%**
3. **Lab Report – 20%**
4. **Midterm – 20%**
5. **Final – 20%**

Notes

- Lab reports and tasks will be done individually.
- Lab tasks (Logisim file) must be submitted within the class time.
- Lab reports (PDF) must be submitted by the end of the class time.
- Failure to submit on time will result in a penalty.
- Plagiarism in any case will not be tolerated.