ECE241F: Digital Systems Laboratory Information and Evaluation
Department of Electrical and Computer Engineering, University of Toronto
P. Chow and J. Rose, Fall 1996

Labs

- five hardware laboratories of 3 hours each
- labs are where you get to practice and learn about actual hardware implementation
  - each lab requires you to do significant preparation work
  - this will be assigned a grade out of 5:

1	made a legitimate attempt
2	some merit to work
3	reasonable job, may be missing some things
4	done well
5	above and beyond the call of duty (something special)

  - you will also receive a grade out of 3 for the work you do in the lab

0	didn't attend or did not try
1	tried but failed to get much working
2	most, but not all working
3	everything worked

  - it is **guaranteed** that both the midterm and final will each include at least one question related to the laboratories

Project

- the project is a chance for you to conceive, implement and execute an idea of your own
- It consists of three 3-hour lab periods, at the end of the term
- You will be required to develop a short project proposal, which you should discuss with a TA or instructor and it will have to receive signed approval from either a TA or an instructor, **before** the first project period
- you **must** come to the first project period prepared to begin implementing your project
- in each project lab period, your preparation design work and progress will be evaluated and graded.

TA Evaluation

- You will have opportunities to evaluate your TAs.
  - in this sense think of the TAs as service providers, and you are the customers.
  - Customer satisfaction is important (now that Wal-Mart has arrived)
- Please provide immediate feedback if problems arise.

Lab Requirements

Kits NEW this year. In previous years when you take ECE 231S (Electronics) in the spring term, you are required to purchase a kit with various components, chips, wires and a prototyping board, one per group of two. Since we are expanding the project to three weeks this year, you need to be able to take home your hardware in between lab periods. For this reason we have arranged to have the kits that were previously purchased for ECE 231S (and will still be necessary for ECE 231S) available during this term. In addition, you may wish do the wiring for the earlier labs in this course before the actual lab period, which is possible if you have your own kit. The kits contain three PEEL 18CV8PC-25 PALs, among other things, which you will need in your project. **You only need one kit per group of 2**. The kit can be purchased for $68 plus tax, after September 10th from:

Supremetronic
333 Queen Street West (at Beverley)
Toronto.
Phone: 416-598-9585
Fax: 416-598-9898

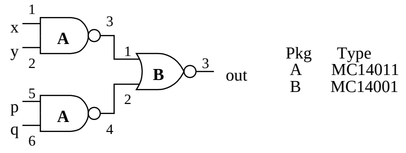
Lab Book You must put your preparation into a Hardcover lab book— use part of a previous one if you want. Please do not come in with a bunch of loose sheets.

Group Number Each station has a number. Please use the same station each week, and use the equipment for that station.

Something Broken If you find a piece of broken equipment, tell a TA to tag the board with the problem and notify someone to have it repaired. Otherwise it will be broken the next time you need to use it!

Lab Preparation

- a crucial part of the learning for each is the preparation that you must do beforehand. This will typically involve designing a digital circuit and simulating it on a computer. You are required to purchase the LogicWorks software package to do this simulation
- if a circuit design is required, then you are required to use Logicworks to draw and simulate it. Your preparation must consist of both the printed, schematic and a printed correctly working simulation
- You should annotate the schematic with pin numbers for the packages.
  - An example schematic is shown below:



  - Each logic element is labeled as to the package it is from.
  - The pin numbers for the package should be shown.
  - You do not have to worry about showing the power connections for each package.
- If there are questions asked, answer them.

Professional Ethics

As Electrical and Computer Engineers, you are acquiring skills, knowledge, and access to facilities that allow you to do things many others cannot. You should use these powers properly. Your engineering degree is a *professional* degree and part of your training is to learn to act professionally and ethically.

For example, unethical behaviour includes:

- copying the work (assignments, exams) of other people and claiming it as your own
- copying or using software without the proper license
  - such as the LogicWorks software
- knowingly damaging equipment or disrupting service
- using equipment or facilities for illegal or non-academic purposes such as
  - breaking passwords
  - breaking into computers or communications facilites
  - deleting files and programs without authorization
  - distributing pirated software