# Lab Policies and Procedures

Welcome to COE-200 Digital Logic Design Laboratory. This lab will introduce you to the exciting world of digital system design.

Digital devices have increasingly become an integral part of our lives. From relatively simpler systems like the digital watches and pocket calculators to too much more complex machines like computers, digital notebooks etc, these devices form the basis of every modern technology. Their application areas cover a very wide spectrum ranging from industry, military, household automation and multimedia. Many devices today incorporate mini digital processing machines and are said to have embedded (invisible) systems.

The field or rather art of designing these digital devices is a very interesting area of study and research. Due to the widespread and complex use of these devices, there has always existed a constant drive to cut the design time and increase efficiency. The classic paradigm evolved around the use of individual ICs (Integrated Circuits) for design. But given its lagging pace and poor efficiency in terms of design time, there has been a steady motivation towards using automated procedures. Today, rapid prototyping and development of embedded systems have become a reality through the use of FPGAs (Field Programmable Gate Arrays) and front-end tools.

The purpose of this lab is two-fold – at one end it introduces students to digital logic with hands-on practice for digital design and at the other, familiarizes them with the high-level design process.

We hope that this would be an interesting journey for you.

## Equipment

1- FPGA board.
2- PC with the FPGA board software installed.
3- IC tester.
4- Wires and wire stripper.
5- Oscilloscope.

## Policies and Procedures

1- Each lab experiment should be read carefully before coming to the lab.
2- Pre-lab work should be done and a report should be submitted to your lab instructor at the beginning of the lab.
3- During the lab, you have to show your instructor the design and you have to implement it on the board.
4- You must submit a report at the end of each experiment.
5- Save your work for each experiment on a floppy or a flash memory for next experiments. **Do not save your work on the machine.**
6- Before using the FPGA board, you have to use the ESD wrist wraps in order to discharge any electrostatic charges in your body.
7- Switch on the power supply of the FPGA board when your design is ready for programming.
8- When you are done, disconnect the power supply from the FPGA board.
9- Do not disconnect the parallel port cable connected to the FPGA board.
10- Do not touch the internal connections and chips on the FPGA board with your hand. If you need to move the board, try to hold it carefully from the edges of the board.
11- *Cheating* **is strictly prohibited** in COE 200 lab (in your life).
    a. If you cheat for the first time, the maximum you can get in the lab is 10 out of 20.
    b. If you cheat for the second time, you will get a zero out of 20.
12- If you miss any laboratory experiment, do it as a makeup before coming to the next laboratory because most of the experiments will be built over the previous ones.