Ahsanullah University of Science and Technology
Department of Computer Science and Engineering (CSE)

Course Outline

Course No: CSE2210
Course Title: Digital Electronics and Pulse Techniques Lab
Credit Hour: 0.75
Semester (Session): Spring 2020
Student Year & Student Semester: 2nd Year, 2nd Semester
Course Teacher(s): Shoeb Mohammad Shahriar, Assistant Professor
Nowshin Nawar Arony, Lecturer

Course Objective:

- Practical implementation of a complex digital system.
- To handle substantial and challenging design problems.
- To implement how signals are used to represent digital values in different logic families, including characterization of the noise margins.
- To create the appropriate truth table from a description of a combinational logic function.
- To create a gate-level implementation of a combinational logic function described by a truth table using AND/OR/Inverter gates.
- To design and implement sequential circuits.

Preferred Programming Language/Tools:

- DC Power Supply
- Breadboard
- Transistor
- Diode
- Pulse Generator
- Multimeter

Text/ Reference books:

- Microelectronics: Digital and Analog Circuits and Systems, International Student Edition by Jacob Millman. McGraw-Hill International Book Company, 1979.
- Millman's Pulse, Digital and Switching Waveforms, 2nd Edition by Jacob Millman and Herbert Taub.

Session Plan:

Session	Topics/Contents
01	***Introduction to Digital Electronics and Pulse Techniques Lab*** Basic and preliminary ideas of Transistors, Diodes, Multimeter, Trainer Board, etc.
02	***Experiment- 1:*** Study of DL and DTL gates.
03	***Experiment- 2:*** Study of a transistorized NOT gate.
04	***Experiment- 3:*** Study of a TTL NAND gate with totem-pole output.
05	***Experiment- 4:*** Study of a RTL NOR gate.
06	***Experiment- 5:*** Implementation of clocked SR Flip Flop using RTL NOR gates.
07	***Lab Final:*** • Circuit Set-up and Viva • Written test

Note: *This Session Plan is subject to change. The course teacher will slow down or speed up each chapter to meet the needs of students*.

Marks Distribution:

Attendance and Class Performance	20
Assignment (Class Assignment/ Lab Report/ Online/Quiz)	60
Lab Final (Lab Set-up/Viva/Lab Quiz)	20
Total	**100**