



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)	: Fall 2019
Student Year & Student Semester	: 2 nd Year, 2 nd Semester
Course Teacher(s)	: Shoeb Mohammad Shahriar, Assistant Professor Al Hasib Mahmud, 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	<i>Introduction to Digital Electronics and Pulse Techniques Lab</i> Basic and preliminary ideas of Transistors, Diodes, Multimeter, Trainer Board etc.
02	<i>Experiment- 1:</i> Study of DL and DTL gates.
03	<i>Experiment- 2:</i> Study of a transistorized NOT gate.
04	<i>Experiment- 3:</i> Study of a TTL NAND gate with totem-pole output.
05	<i>Experiment- 4:</i> Study of a RTL NOR gate.
06	<i>Experiment- 5:</i> Implementation of clocked SR Flip Flop using RTL NOR gates.
07	<i>Lab Final:</i> <ul style="list-style-type: none">• Circuit Set-up and Viva• Written test

Note: *This Session Plan is subject to change. 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)	40
Lab Final (Lab Set-up/Viva/Lab Quiz)	40
Total	100