VLSI DESIGN LAB
PCC-ECE304-P

Course Credits : 1 Contact Hours: 2/week per group (L-T-P: 0-0-2) Mode : Lab Work	**Course Assessment Methods (Internal: 30; External: 70)**

Sr. No.	Course Outcomes At the end of the semester, students will be able:	RBT Level
CO 1	Describe the CMOS technology and its applications for VLSI design.	L1
CO 2	Illustrate the VLSI circuit design techniques practically.	L2
CO 3	Demonstrate the importance of CAD tools in VLSI system design.	L3
CO 4	Compare the various circuit topologies for digital VLSI design.	H1
CO 5	Design and evaluate the layout of VLSI circuits.	H2
CO 6	Develop or create CMOS system using VLSI CAD tools.	H3

List of Experiments

1. To plot the output characteristics and transfer characteristics of an n-channel and p-channel MOSFET.
2. To design and plot the static (VTC) and dynamic characteristics of digital CMOS inverter.
3. To design and plot the characteristics of 2-input NAND and NOR CMOS digital logic gate.
4. To design and plot the characteristics of 2-input XOR CMOS digital logic gate.
5. To design and plot the characteristics of 2x1 digital multiplexer using pass transistor logic.
6. To design and plot the characteristics of a positive and negative latch based on multiplexers.
7. To design and plot the characteristics of a master slave positive and negative edge triggered flip-flop based on multiplexers.
8. To design and plot the characteristics of a CMOS 1-bit full adder.
9. To design and plot the characteristics of a CMOS Non-Overlapping two phase Clock.
10. To design and plot the characteristics of a CMOS comparator.
11. To design and plot the characteristics of a CMOS SRAM Cell.
12. Simple project (Any topic related to the scope of the course).

Note: At least eight experiments are to be performed in the semester, out of which minimum six experiments should be performed from above list. Remaining experiments may either be performed from the above list or designed and set by concerned institution as per the scope of the syllabus.