

VLSI Design Lab

Course Code	20EC3653	Year	III	Semester	II
Course Category	Program Core	Branch	ECE	Course Type	LAB
Credits	1.5	L-T-P	0-0-3	Prerequisites	Electronic Devices & Circuits
Continuous Internal Evaluation:	15	Semester End Evaluation:	35	Total Marks:	50

Course Outcomes

Upon successful completion of the course, the student will be able to	
CO1	Analyze various combinational and sequential logic circuits using simulation tools (L4)
CO2	Model arithmetic logic circuits using simulation tools (L3)
CO3	Analyze various amplifiers using simulation tools (L4)
CO4	Simulate memories using simulation tools (L3)
CO5	Make an effective report based on experiments.

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3			3								3	
CO2		3			3								3	
CO3	1				1								1	
CO4	1				1								1	
CO5										3				
Avg.	1	3			2					3			2	

Syllabus

Expt. No.	Contents	Mapped CO
1	Design and simulate a CMOS inverter	CO1,CO5
2	Design and simulate CMOS Basic Gates(4 experiments)	CO1,CO5
3	Design and simulate CMOS Adders(2 experiments)	CO2,CO5
4	Design and simulate pass transistor logic(2 experiments)	CO1,CO5
5	Design and simulate multiplexers	CO1,CO5
6	Design and simulate Latch	CO1,CO5
7	Design and simulate amplifiers (two experiments)	CO3,CO5
8	Design and simulate SRAM	CO4,CO5
9	Design and simulate Sampling switch	CO1,CO5

Learning Resources

Text Books

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| 1. R. Jacob Baker, "CMOS: Circuit Design, Layout, and Simulation", IEEE Press, Wiley, 2010 |
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References:

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| 1. Kang, Leblibici, CMOS Digital Integrated Circuits, 3 rd Ed., Tata Mc-Graw Hill, 2001. |
| 2. Jan M. Rabaey, Digital Integrated Circuits, 2 nd Ed., Pearson Education, 2002. |