VLSI Design Lab

Course Code	23EC3651	**Year**	III	**Semester**	II
Course Category	PC	**Branch**	ECE	**Course Type**	Lab
Credits	1.5	**L-T-P**	3-0-0	**Pre requisites**	Switching Theory and Logic Design
Continuous Internal Evaluation	30	**Semester End Evaluation**	70	**Total Marks**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		BL
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 and Oscillators using simulation tools	L4
CO4	Simulate memories using simulation tools	L3

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength ofCorrelations (3:High, 2:Medium, 1:Low)

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

Syllabus		
Expt. No.	**Contents**	**Mapped CO**
1	Design and implementation of an inverter	**CO1**
2	Design and implementation of universal gates	**CO1**
3	Design and implementation of full adder	**CO1,CO2**
4	Design and implementation of full subtractor	**CO1,CO2**
5	Design and implementation of RS-latch	**CO1**
6	Design and implementation of D-latch	**CO1**
7	Design and implementation asynchronous counter	**CO1**
8	Design and Implementation of static RAM cell	**CO4**
9	Design and Implementation of differential amplifier	**CO3**
10	Design and Implementation of ring oscillator	**CO3**

Learning Resources
Text Books
1. R. Jacob Baker, “CMOS: Circuit Design, Layout, and Simulation”, IEEE Press, Wiley, 2010
Reference Books

1. Kang, Leblibici, CMOS Digital Integrated Circuits, 3rd Ed., Tata McGraw Hill, 2001. 2. Jan M. Rabaey, Digital Integrated Circuits, 2nd Ed.,, Pearson Education, 2002.
e- Resources & other digital material
1.https://nptel.ac.in/courses/106/105/106105165/