DIGITAL LOGIC DESIGN LAB

Course Code	20EC3352	Year	II	Semester	I
Course Category	Program Core	Branch	ECE	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Prerequisites	Nil
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	Describe the truth tables of different Combinational & Sequential circuits (L2)
CO2	Construct Logic gate circuits for given Boolean functions (L3)
CO3	Analyse different Combinational & Sequential circuits (L4)
CO4	Design Combinational and Sequential circuits for the given specifications (L6)
CO5	Make an effective report based on experiments(L3)

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												2	2
CO2	3												3	2
CO3		3											2	2
CO4			2										2	3
CO5										3				
Average* (Rounded to nearest integer)	3	3	2							3			2	2

Syllabus		
Expt. No.	Contents	Mapped CO
I	Verification of Truth Tables of Logic gates	CO1
II	Implementation of Basic gates using Universal Gates	CO1
III	Implementation of the given Boolean functions using logic gates	CO2
IV	Simplification of the given Boolean functions using K-map and implementation using logic gates	CO2
V	Realization and verification of Full adder and Full Subtract or using logic gates	CO1, CO2
VI	Implementation of 2x4 Decoder and 4x1 Multiplexer using Logic Gates	CO1, CO2

VII	Implementation of the given function using decoder and logic gates	**CO2, CO3**
VIII	Implementation of the given function using Multiplexer	**CO2, CO3**
IX	Verification of State Tables of SR, D, JK and T-Flip-Flops	**CO1, CO3**
X	Design and Verify the operation of 3-bit Ripple Counters using JK flip-flops	**CO1, CO2, CO4**
XI	Design and Verify the operation of 3-bit Synchronous Counter using T flip-flops	**CO1, CO2, CO4**
XII	Design and Verify the operation of a 4-bit Shift Register	**CO3, CO4**
XIII	Mini Project	**CO1, CO2, CO3, CO4**

Learning Resources
Text Books
1. Michael D. Ciletti, M. Morris Mano, Digital Design, 4/e. Pearson Education, 2007
Reference Books
1. ZviKohavi, Switching and Finite Automata Theory, 2/e, Tata McGraw-Hill Education, 2008 2. John F. Wakerly, Digital Design Principles and Practices, 4/e, Pearson Education, 2008
e- Resources & other digital material
1. http://www.ece.ubc.ca/~saifz/eece256.html 2. http://nptel.iitm.ac.in/courses/Webcourse-contents/IIT%20Guwahati/digital_circuit /frame/index.html

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