

Sardar Patel Institute of Technology Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India

(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)				Credits Assigned			
		L	Т	P	L	Т	Р	Total	
ETL32	Digital Circuits Lab			2			1	1	
		Examination Scheme							
		Term Work				ESE			
					Prac	ctical	Oral		
		40			10		10	60	

Pre-requisite Course Codes		rse Codes	ET33 (Digital Circuits)		
After successful completion of the course, student will be able to					
	CO1	Follow the	given instructions for performing an experiment on the breadboard		
	CO2	Construct	logic circuits using gate to realize given function		
Course	CO3	Construct	logic circuits using MSI ICs to realize given function		
Outcomes	CO4	Validate the design of combinational and sequential logic circuits by hardware implementation			
	CO5	Test and tr	oubleshoot given logic circuits using testing instruments		
	CO6	Develop a	n application using concepts of digital circuits		

Exp. No.	Experiment Details	Ref.	Marks
1	To implement the combinational logic for given function using basic gates/MSI ICs.	1,2	5
2	To study TTL and CMOS logic family	1,2	5
3	To study 4-bit, 5-bit and 8 bit comparator using IC7485	1,2	5
4	To study of gate level multiplexers and MSI multiplexers	1,2	5
5	To study the gate level implementation and MSI circuits of flip-flops	1,2	5



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6	To design mod 4 synchronous up/down counter using JK flip-flop	1,2	5	
7	To study IC7490, IC7492 and IC7493 as asynchronous counter, IC74160, IC74163, IC74169 as synchronous counters and IC74194 as universal shift register.	1,2	5	
8	Mini-Project: Design and implement an application using digital circuit concepts.	1,2	5	
	Total Marks			

References:

- [1] Datasheets and application notes of LSI and MSI circuits.
- [2] R. P. Jain and M. M. S. Anand "Digital Electronics Practice Using Integrated Circuits,"

TataMc Graw Hill Education