

The Maharaja Sayajirao University of Baroda Polytechnic Diploma in Electronics & Communication Engg. (HPP)			ACADEMIC YEAR 2021-22		
Year	I	DIGITAL ELECTRONICS (ELE3224)	Lecture/Lab Hrs per week	4/2	
Semester	II		Max marks	100	
Pre-Requisite: Basic Mathematics, Basic Electronics					
CO1	Interpret various number systems and digital codes.				
CO2	Minimize combinational logic using Boolean algebra, truth tables, K-maps, and tabulation.				
CO3	Construct digital circuits using basic gates, universal gates, decoders, multiplexers, encoders, and code converters.				
CO4	Explain arithmetic circuits (adders, subtractors, carry look-ahead) and storage elements such as latches, flip-flops, and shift registers.				
CO5	Implement different types of digital counters.				
BT	1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation				
COURSE CONTENT/SYLLABUS					
Unit	Unit Name		Hrs	Weightage	CO
1	Number System, Various Codes, Related exercise.		8	20	CO1
2	Boolean algebra, propositions, truth tables, minimization of combinational circuits. Karnaugh maps and tabulation procedure, implementation of sum of product and product of sum in hardware.		15	24	CO2
3	Logic gates, Universal Gates, Circuits using Gates		5	8	CO3
4	Decoders, multiplexers, and code converters, Encoders, carry look ahead addition, Adder, Subtractor		10	22	CO3
5	Storage elements, flip-flops, and latches: shift register, counter.		10	14	CO4
6	Implementation of Counter.		8	12	CO5
			56	100	
REFERENCE BOOKS:					
1.	DIGITAL ELECTRONICS & PRINCIPLES, By Malvino Leach				
2.	DIGITAL ELECTRONICS & PRINCIPLES, By Anand Kumar				
3.	PULSE DIGITAL CIRCUITS, BY H. Taub				