Shri G.S. Institute of Technology & Science, Indore
Dept. of Electronics & Telecommunication Engineering
B.Tech. II Year [Session: July – Dec 2024]
EC25XXX: DIGITAL SYSTEM DESIGN

LECTURE PLAN

Lecture No.	Topic Covered	Remark
1.	Introduction and motivation behind learning the course. Dissemination of attributes of OBE.	
2.	Logic gates and their presentation using diode	
3.	Review of Boolean Algebra and theorems	
4.	De Morgan's Theorem, Binary codes, Code Conversion	
5.	SOP & POS forms, SOP & POS implication	
6.	Problems discussion	
7.	Karnaugh maps And logic design and applications	
8.	Intro to Flip flop, Building block of S-R, D flip flop	
9.	T, JK and Master-Slave JK FF and their conversion	
10.	Edge triggered FF, Ripple and Synchronous counters	
11.	Design of counter	
12.	Shift registers and applications	
13.	Problems discussion	
14.	Half adder and Full Adders, Subtractors	
15.	MSI device like comparators, Multiplexers	
16.	Encoder, Decoder, design and application	
17.	Serial and Parallel Adders, BCD Adder.	
18.	Introduction to Logic families and its types & Specifications	
19.	Noise margin, Propagation delay, fan-in, fan-out, TTL NAND gate	
20.	HTL, TTL, IIL, ECL logic diagram	
21.	CMOS families and their interfacing, Memory elements	
22.	Concept of Programmable logic devices like PLA, PAL, FPGA	
23.	Logic implementation using Programmable Devices	
24.	Problems Discussion	
25.	Intro to A to D conversion and its significance	
26.	Introduction to A/D & D/A conversion & their types	
27.	Sample and hold circuits, Voltage to Frequency & Frequency to Voltage conversion.	
28.	Multivibrators: Bistable and its design and application	
29.	Monostable, Astable Multivibrators and its design and application	
30.	Schmitt trigger, IC555, IC565 & their applications.	

Remedial classes and MST classes are additive.

Note:- Institute and Department Vision Mission is disseminated in the Initial lecture. Rubric based assessment, CO, PO are discussed in the class.