DEPARTMENT OF ELECTRONICS & TELE COMMUNICATION ENGINEERING

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL,JHARSUGUDA	
Name of the Faculty: JYOTI NAIK	Academic Year: 2025-26
Course Code.: Th-4	Course name: DIGITAL ELECTRONICS
Programme: Diploma	Branch: E&TC
Year/ Sem:-2ND / 3RD	Section:

Sl. No.	Period	Time (min)	Unit	Topic to be Covered	Teaching Method
1.	1.	1Hr	1	Basic logic gates: OR, AND, and NOT Truth tables Logic symbols Logic voltage levels Logic circuit design examples	SMART BOARD
2.	2.	1Hr	1	Integrated Circuits NOR, NAND, Exclusive OR, and Exclusive NOR gates.	Black board
3.	3.	1Hr	1	NOR and NAND gates used as inverters. Fan-in and fan-out	Black board
4.	4.	1Hr	1	Termination of unused inputs AND and OR gates constructed from NAND and NOR gates	SMART BOARD
5.	5.	1Hr	2	Boolean operations (OR, AND, NOT) Representation of logic circuits by Boolean expressions.	Black board
6.	6.	1Hr	2	Laws of Boolean algebra: OR identities AND identities: Cumulative laws Associative laws Distributive laws: DeMorgan's theorems Applications to logic circuit simplifications and design	Black board
7.	7.	1Hr	2	Equivalent logic gates NAND and NOR implementations of logic circuits.	SMART BOARD
8.	8.	1Hr	2	Standard forms of Boolean expressions Sum-of-products (SOP), Product-of-sums (POS)	SMART BOARD
9.	9.	1Hr	2	Karnaugh mapping	Black board
10	10.	1Hr	3	Half adder ,Full adder	SMART BOARD
11	11.	1Hr	3	Half Subtractor ,Full Subtractor	SMART BOARD
12	12.	1Hr	3	4 bit adder. Multiplexer (4:1)	SMART BOARD
13	13.	1Hr	3	De- multiplexer (1:4) ,Decoder	Black board
14	14.	1Hr	3	Encoder Digital comparator (3 Bit)	SMART BOARD
15	15.	1Hr	3	Seven segment Decoder	Black board

16	16.	1Hr	4	Basic latches NOR latch	SMART BOARD
17	17.	1Hr	4	NAND latch Example uses of latches	SMART BOARD
18	18.	1Hr	4	Gated latches Gated S-R latch Gated D-latch	Black board
19	19.	1Hr	4	Flip-flops: Master-slave and edge-triggered principles	Black board
20	20.	1Hr	4	S-R flip-flop D-type flip-flop J-K flip-flop	Black board
21	21.	1Hr	4	T-type flip-flop Flip-flop timing diagrams	Black board
22	22.	1Hr	5	1 Circuit diagram and working principle of Binary counters Up-down counter (circuits, truth tables, and timing diagrams)	Black board
23	23.	1Hr	5	Asynchronous counters and ripple counter	SMART BOARD
24	24.	1Hr	5	Synchronous counters Decade counter	Black board
25	25.	1Hr	5	Module–n counter and its combinations	SMART BOARD
26	26.	1Hr	5	Divide-by-n counters obtained from truncated binary sequences	Black board
27	27.	1Hr	5	Synchronous counter design using D-type flip-flops	Black board
28	28.	1Hr	5	Synchronous counter design using J-K flip-flops	Black board
29	29.	1Hr	6	Circuit diagram, truth tables, and timing diagrams of Shift Registers	Black board
30	30.	1Hr	6	Serial input shift register	SMART BOARD
31	31.	1Hr	6	Serial/parallel load shift register	Black board
32	32.	1Hr	6	Shift register counters : Ring counter	Black board
33	33.	1Hr	6	Self-starting ring counter Johnson counter	SMART BOARD
34	34.	1Hr	7	Define the terms ROM, RAM, PROM, EPROM.	Smart Board
35	35.	1Hr	7	Draw a typical memory cell	Black board
36	36.	1Hr	7	Design a small diode matrix ROM to serve as a code converter.	Black board
37	37.	1Hr	7	Design and draw the logic diagram of a specified size memory system	Black board
38	38.	1Hr	7	Operating principle of dynamic memory	SMART BOARD
39	39.	1Hr	7	Advantages and disadvantages of dynamic memory vs. static memory	Black board
40	40.	1Hr	7	Difference between dynamic memory vs. static memory	SMART BOARD

41	41.	1Hr	8	Combinational vs. Sequential circuits	Black board
42	42.	1Hr	8	Combinational vs. Sequential circuits	Black board
43	43.	1Hr	8	Adder, Subtractor, decoder	SMART BOARD
44	44.	1Hr	8	multiplexer, de-multiplexer, and comparator	SMART BOARD
45	45.	1Hr	8	Finite state machines- Concept only	Black board