DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION ENGINEERING

ACADEMIC LESSION PLAN FOR WINTER SEMESTER 2021-22	
JHARSUGUDA ENGINEERING SCHOOL,JHARSUGUDA	
Name of the Faculty: SUNIL KUMAR PAL	Academic Year:2021-22
Course No.: TH-3	Course Name: DIGITAL ELECTRONICS
Program: Diploma	Branch: IT / ETC
Year/Sem: 2nd/3rd	Section:
Total Period s : 60 P/ Sem	End Semester Exam : 80marks
Internal Assessment : 20 Marks	TOTAL MARKS :100 Marks

Sl. No.	Period	Time (min)	Unit/ Chapter	Topic to be covered	Teaching method
1.	1.	55	1	Number System-Binary, Octal, Decimal, Hexadecimal -	Black board
2.	2.	55	1	Conversion from one system to another number system.	Black board
3.	3.	55	1	Numerical on number system conversion.	Black board
4.	4.	55	1	Arithmetic Operation-Addition, Subtraction, Multiplication, Division,	Black board
5.	5.	55	1	1's & 2's complement of Binary numbers& Subtraction using complements method	Black board
6.	6.	55	1	Numerical on 2's complement method.	Black board
7.	7.	55	1	Digital Code & its application & distinguish between weighted & non-weight Code,	Black board
8.	8.	55	1	Binary codes, excess-3 and Gray codes.	Black board
9.	9.	55	1	Logic gates: AND,OR,NOT,NAND,NOR, Exclusive-OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram	Black board
10	10.	55	1	Universal Gates(NAND) & its Realisation	Audio visual smart class
11	11.	55	1	Universal Gate(NOR) & its Realisation	Audio visual smart class
12	12.	55	1	Boolean algebra, Boolean expressions, Demorgan's Theorems.	Black board
13	13.	55	1	Represent Logic Expression: SOP & POS forms	Black board
14	14.	55	1	Karnaugh map (3 & 4 Variables)&Minimization of logical expressions ,	Black board

15	15.	55	1	Karnaugh map with don't care conditions	Black board
16	16.	55	1	Numerical on K-map	Black board
17	17.	55	2	Combinational logic circuits: Half adder	Black board
18	18.	55	2	Design of Full adder,	Black board
19	19.	55	2	Design of Half Subtractor ,	Black board
20	20.	55	2	Design of Full Subtractor	Black board
21	21.	55	2	Serial and Parallel Binary 4 bit adder.	Black board
22	22.	55	2	Carry look ahead generator	Black board
23	23.	55	2	Design of Multiplexer (4:1),	Black board
24	24.	55	2	Design of De- multiplexer (1:4)	Black board
25	25.	55	2	Design of Decoder	Black board
26	26.	55	2	Design of Encoder	Black board
27	27.	55	2	Design of Digital comparator (3 Bit)	Black board
28	28.	55	2	Seven segment display Decoder	Black board
29	29.	55	3	Basics of Sequential logic Circuits	Black board
30	30.	55	3	Difference between combinational; and sequential circuits.	Black board
31	31.	55	3	Principle of flip-flops operation, its Types,	Audio visual smart class
32	32.	55	3	SR Flip Flop using NAND,NOR Latch (un clocked)	Black board
33	33.	55	3	Clocked SR flipflop	Black board
34	34.	55	3	Design of JK flipflop	Black board
35	35.	55	3	Concept of Racing and how it can be avoided	Black board
36	36.	55	3	Design of Master Slave JK flipflop	Black board
37	37.	55	3	Design of D flipflop logic Circuit, truth table and applications	Black board
38	38.	55	3	Design of T flipflop logic Circuit, truth table and applications	Black board
39	39.	55	4	Shift Registers-Serial in Serial -out, Serial- in Parallel-out,	Black board
40	40.	55	4	Shift Registers- Parallel in serial out and Parallel in parallel out	Black board
41	41.	55	4	Universal shift registers-Applications.	Black board
42	42.	55	4	Types of Counter & applications	Audio visual smart class
43	43.	55	4	Design of Binary counter	Black board
44	44.	55		Design of Asynchronous ripple counter (UP & DOWN)	Black board
45	45.	55	4	Design of Decade counter.	Black board
46	46.	55	5	Design of Synchronous counter,	Black board
47	47.	55	5	Design of Ring Counter.	Black board
48	48.	55	5	Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM	Black board
49	49.	55	5	Basic concept of PLD & applications	Black board
50	50.	55	5	Necessity of A/D and D/A converters.	Black board
51	51.	55	5	D/A conversion using weighted resistors methods	Black board
52	52.	55	5	D/A conversion using R-2R ladder (Weighted resistors) network	Black board

53	53.	55	5	A/D conversion using counter method.	Black board
54	54.	55	5	A/D conversion using Successive approximate method	Black board
55	55.	55	6	Various logic families &categories according to the IC fabrication process	Black board
56	56.	55	6	Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in,	Black board
57	57.	55	6	Power Dissipation ,Noise Margin	Black board
58	58.	55	6	,Power Supply requirement &Speed with Reference to logic families.	Black board
59	59.	55	6	Features, circuit operation &various applications of TTL(NAND)	Audio visual smart class
60	60.	55	6	Features, circuit operation &various applications of CMOS (NAND & NOR)	Audio visual smart class