



DEPARTMENT OF ELECTRONICS & TELE COMMUNICATION ENGINEERING

LESSON PLAN	
JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA	
Name of the Faculty: SUNIL KUMAR PAL	Academic Year: 2025-26
Course Code.: Th-2	Course name: ELECTRONICS DEVICE
Programme: Diploma	Branch: E&TC
Year/ Sem: -2 <sup>ND</sup> /3 <sup>RD</sup>	Section:

Sl. No.	Period	Time (min)	Unit	Topic to be Covered	Teaching Method
1.	1.	1Hr	1	Review of Quantum Mechanics , Electrons in periodic Lattices	Black board
2.	2.	1Hr	1	Energy bands in intrinsic and extrinsic silicon ,Carrier transport	Black board
3.	3.	1Hr	1	Diffusion current ,Drift current ,Mobility and resistivity	Black board
4.	4.	1Hr	2	Generation and recombination of carriers , Poisson and continuity equation	Black board
5.	5.	1Hr	2	P-N Junction Diodes , Construction of P-N Junction Diode	Black board
6.	6.	1Hr	2	Operating Principle	Black board
7.	7.	1Hr	2	P-N junction characteristics	Black board
8.	8.	1Hr	2	I-V characteristics	Smart board
9.	9.	1Hr	2	Small signal switching models	Smart board
10	10.	1Hr	2	Avalanche breakdown	Smart board
11	11.	1Hr	2	Zener diode	Black board
12	12.	1Hr	2	Schottky diode	Black board
13	13.	1Hr	2	LED ,Photodiode and solar cell	Black board
14	14.	1Hr	3	Construction of BJT , Operating Principle of BJT	Black board
15	15.	1Hr	3	Types of BJT , Working principle of p-n-p and n-p-n BJT	Black board
16	16.	1Hr	3	I-V characteristics , Ebers Moll Model	Smart board
17	17.	1Hr	3	Different types of transistor connection , Common Base (CB) , Common Emitter (CE) ,Common Collector (CC)	Smart board
18	18.	1Hr	3	Input and output characteristics of transistor in different connections , Define ALPHA, BETA and GAMMA of transistors in various modes.	Black board

19	19.	1Hr	3	Establish the Mathematical relationship between ALPHA, BETA and GAMMA , Basic concept of Biasing	Black board
20	20.	1Hr	3	Types of Biasing.	Black board
21	21.	1Hr	3	Load line and determine the Q-point.	Black board
22	22.	1Hr	3	Types of Coupling	Black board
23	23.	1Hr	3	Working principle and use of R-C Coupled Amplifier	Smart board
24	24.	1Hr	3	Frequency Responses of R-C coupled Amplifier	Smart board
25	25.	1Hr	3	h-parameter model of BJT	Black board
26	26.	1Hr	4	FET & its classifications	Black board
27	27.	1Hr	4	Differentiate between JFET & BJT , Construction, working principle & characteristics of JEFT	Smart board
28	28.	1Hr	4	Parameters of JFET & establish relation among JFET parameters	Black board
29	29.	1Hr	4	JEFT as an amplifier	Black board
30	30.	1Hr	4	Construction and working principle of MOSEFT	Smart board
31	31.	1Hr	4	Classification of MOSEFT	Smart board
32	32.	1Hr	4	Characteristics (Drain & Transfer) of MOSEFT	Smart board
33	33.	1Hr	4	Explain the operation of CMOS, VMOS & LDMOS.	Black board
34	34.	1Hr	5	Define & classify Feedback Amplifier	Black board
35	35.	1Hr	5	Types of feedback – negative & positive feedback.	Smart board
36	36.	1Hr	5	Types of feedback – negative & positive feedback.	Black board
37	37.	1Hr	5	Characteristics voltage gain, bandwidth, input Impedance output impedance, stability, noise and distortion in amplifiers.	Black board
38	38.	1Hr	5	Characteristics voltage gain, bandwidth, input Impedance output impedance, stability, noise and distortion in amplifiers.	Smart board
39	39.	1Hr	5	Oscillator , Block diagram of sine wave oscillator	Smart board
40	40.	1Hr	5	Types Requirement of oscillation , Barkhausen criterion	Black board
41	41.	1Hr	5	LC oscillators , Colpitts Oscillators	Black board
42	42.	1Hr	5	Hartley Oscillators , Wien Bridge Oscillators	Black board
43	43.	1Hr	6	Oxidation , Diffusion , Ion implantation	Smart board
44	44.	1Hr	6	Photo-lithography , Etching , Chemical vapour deposition	Smart board
45	45.	1Hr	6	Sputtering , Twin-tub CMOS process	Smart board