Lesson Plan

Name of the Faculty	Dr.Prerna Garg
Discipline	B.Tech (CSE, AIML,CIV
Semester	1st /2nd
Subject	Semiconductor Physics (B24-B
Work Load (Lecture/Tutorial) per week	Lecture-4/ Tutorial-2

S.No	Lecture No.	Theory	
		Topic (Including Assignment/Test/Quiz)	Pe PPT/Mark ng /Activ
1.	L 1	**Crystal Structure:** Crystalline and Amorphous solids, Space lattice, basis	Mar
2.	L 2	Unit cell and Primitive cell,lattice translation vector	Mar
3.	L 3	Two and three dimensional Bravais lattices	
4.	L 4	Characteristics of Unit cells: SC, BCC structure	Mar
5.	L 5	FCC structure	Mar
6.	L 6	HCP structure	Mar
7.	L 7	Simple crystal structure: NaCl, CsCl structure	Mar
8.	L 8	Diamond, ZnS structure	Mar

13.	L 13	Frenkel defect	Mar
14.	L 14	**Assignment 1 & Revision**	On Paper (H
15.	L 15	**Quantum theory:** Need and origin of Quantum concept	Mar
16.	L 16	Wave-particle duality, Phase velocity	Mar
17.	L 17	group velocity	Mar
18.	L 18	Relations between Phase & Group velocity	Mar
19.	L 19	Uncertainty Principle and applications	Mar
20.	L 20	Schrodinger's time-independent & time-dependent wave equation. Physical significance of wave function	Mar
21.	L 21	**Assignment 2 &Revision**	On Paper (H
		1st Sessional Test On Paper (Hard Copy)	
22.	L 22	**Free electron theory:** Classical free electron theory	Mar
23.	L 23	Electrical conductivity in metals	Mark
24.	L 24	Thermal conductivity in metals, Wiedmann- Franz law	Ma
25.	L 25	Success and drawbacks of free electron theory	Ma
26.	L 26	Quantum free electron theory: wave function, eigen values	Ma

32.	L 32	Kronig-Penney model (qualitative)	Mar
33.	L 33	Kronig-Penney model (qualitative)	Mar
34.	L 34	E versus K diagram, Brillouin Zones	Mar
35.	L 35	Concept of effective mass of electron	Mar
36.	L 36	Energy levels and energy bands	Mar
37.	L 37	Distinction between metals, insulators and semiconductors	Ma
38.	L 38	Hall effect and its applications	Mar
39.	L 39	**Assignment 3 &Revision**	On Paper (H
		2^{nd} Sessional Test On Paper (Hard Copy)	
40.	L 40	**Semiconductors:** Conduction in Semiconductor	Mar
41.	L 41	Intrinsic Semiconductors: Conductivity of charge carriers	Mar
42.	L 42	Carrier concentration in intrinsic semiconductors	Mar
43.	L 43	Extrinsic Semiconductors: n-type semiconductors, p-type semiconductors,	Mar
44.	L 44	Charge carrier concentration in extrinsic semiconductors	Mar

49.	L 49	Metal-Semiconductor junction (Ohmic&Schottky)	Ma
50.	L 50	**Assignment 4 &Revision**	On Pape
		3rd Sessional Test On Paper (Hard Copy)	