

BHOJ REDDY ENGINEERING COLLEGE FOR WOMEN, HYDERABAD
Lesson Plan for the Academic year 2015-16

Name of the Faculty member : Mrs. G VIJAYA LAXMI
Subject : Engineering Physics
Class : I-B.Tech

Dept : BASIC SCIENCES
Branch : ECE-C
No of lectures per week :3

Lecture Number	Date/Month	Topic to be covered
1	14/08/2015	UNIT-I 1. Crystallography
2	15/08/2015	Ionic Bond, Covalent Bond, Metallic Bond
3	18/08/2015	Hydrogen Bond, Vander-Waal's Bond
4	21/08/2015	Calculation of Cohesive Energy of diatomic molecule
5	22/08/2015	Space Lattice, Unit Cell, Lattice Parameters,
6	25/08/2015	Crystal Systems, Bravais Lattices
7	28/08/2015	Atomic Radius, Co-ordination Number
8	29/08/2015	Packing Factor of SC , BCC
9	01/09/2015	Packing Factor of FCC
10	04/09/2015	Miller indices
11	05/09/2015	Inter Planar Spacing of Orthogonal Crystal Systems
12	08/09/2015	structure of Diamond and Directions, and NaCl
13	11/09/2015	2.X-ray Diffraction & Defects in Crystals: : Bragg's Law
14	12/09/2015	X-Ray diffraction method: Laue Method
15	15/09/2015	X-Ray diffraction method: Powder Method:
16	18/09/2015	Point Defects: Vacancies, Substitutional, Interstitial
17	19/09/2015	Frenkel Defects
18	22/09/2015	Schottky Defects
19	25/09/2015	Schottky Defects in ionic crystals
20	26/09/2015	line defects (Qualitative)
21	29/09/2015	Burger vector
22	03/10/2015	UNIT-II 3. Principles of Quantum Mechanics Waves and Particles, de Broglie Hypothesis
23	06/10/2015	Matter Waves, Davisson and Germer's Experiment,
24	09/10/2015	Heisenberg's Uncertainty Principle, Schrödinger's Time Independent Wave Equation
25	10/10/2015	Physical Significance of the Wave Function
26	16/10/2015	Infinite square well potential extension to three dimensions
27	17/10/2015	4. Elements of Statistical Mechanics& Electron theory of Solids: Phase space, Ensembles , Micro Canonical
28	27/10/2015	Canonical and Grand Canonical Ensembles
29	30/10/2015	Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac Statistics (Qualitative)
30	31/10/2015	Concept of Electron Gas , Density of States
31	03/11/2015	Fermi Energy- Electron in a periodic Potential,
32	06/11/2015	Bloch Theorem, Kronig-Penny Model (Qualitative Treatment),
33	07/11/2015	E-K curve, Origin of Energy Band Formation in Solids
34	10/11/2015	Concept of Effective Mass of an Electron
35	13/11/2015	Classification of Materials into Conductors, Semi Conductors & Insulators.
36	14/11/2015	UNIT-III 5. Dielectric Properties: Electric Dipole, Dipole Moment, Dielectric Constant,

37	17/11/2015	Polarizability, Electric Susceptibility
38	20/11/2015	Displacement Vector, Electronic, Ionic and Orientation Polarizations
39	21/11/2015	Calculation of polarizabilities: ionic
40	24/11/2015	Calculation of Polarizabilities Electronic
41	27/11/2015	Internal Fields in Solids, Clausius - Mossotti Equation
42	28/11/2015	Piezo -electricity ,pyro,and Ferro- electricity.
43	01/12/2015	6. Magnetic Properties & Superconducting Properties: Permeability, Field Intensity,
44	04/12/2015	Magnetic Field Induction, Magnetization, Magnetic Susceptibility
45	05/12/2015	Origin of Magnetic Moment , Bohr Magneton
46	08/12/2015	Classification of Dia, Para and Ferro Magnetic Materials on the basis of Magnetic Moment
47	11/12/2015	Domain Theory of Ferro Magnetism on the basis of Hysteresis Curve,
48	12/12/2015	Soft and Hard Magnetic Materials, Properties of Anti-Ferro Magnetic Materials
49	15/12/2015	Properties of Ferri Magnetic Materials and their Applications
50	18/12/2015	Superconductivity
51	19/12/2015	Meissner Effect
52	22/12/2015	Effect of Magnetic field, Type-I & Type-II Superconductors,
53	26/12/2015	Applications of Superconductors
54	29/12/2015	UNIT-IV 7.Optics: Interference
55	01/01/2016	Interference in thin films(Reflected light)
56	02/01/2016	Newton rings experiment
57	05/01/2016	Fraunhofer diffraction due to single slit, N-slits
58	08/01/2016	Diffraction grating experiment
59	09/01/2016	Double refraction-construction and working, Nicol's Prism
60	12/01/2016	8. Lasers & Fiber Optics: Characteristics of Lasers
61	16/01/2016	Spontaneous and Stimulated Emission of Radiation, Einstein's Coefficients and Relation between them
62	19/01/2016	Population Inversion, Lasing Action
63	22/01/2016	Ruby Laser, Helium-Neon Laser,
64	23/01/2016	Semiconductor Diode Laser, Applications of Lasers
65	29/01/2016	Principle of Optical Fiber, Construction of fiber, Acceptance Angle and Acceptance Cone
66	30/01/2016	Numerical Aperture, Types of Optical Fibers: Step Index fibers
67	02/02/2016	Graded Index Fibers
68	05/02/2016	Attenuation in Optical Fibers, Application of Optical Fiber in communication systems
69	06/02/2016	UNIT-V: 9. Semiconductor Physics
70	09/02/2016	Fermi Level in Intrinsic and Extrinsic Semiconductors
71	12/02/2016	Calculation of carrier concentration in Intrinsic Semiconductors for electron
72	13/02/2016	Calculation of carrier concentration in Intrinsic Semiconductors for holes
73	16/02/2016	Calculation of carrier concentration Extrinsic Semiconductors for p-type
74	19/02/2016	Calculation of carrier concentration Extrinsic Semiconductors for n-type
75	20/02/2016	Direct and Indirect Band gap semiconductors, Hall Effect-

76	23/02/2016	Formation of PN Junction
77	26/02/2016	Open Circuit PN Junction Energy Diagram of PN Diode
78	27/02/2016	Diode Equation I-V Characteristics of PN Junction diode
79	01/03/2016	Solar cell, LED
80	04/03/2016	Photo diodes
81	05/03/2016	Acoustics of Buildings & Acoustic Quieting:, Reverberation and Time of Reverberation, Sabine's Formula for Reverberation Time
82	08/03/2016	Measurement of Absorption Coefficient of a Material,
83	11/03/2016	Factors Affecting The Architectural Acoustics and their Remedies
84	12/03/2016	10. Nanotechnology: Origin of Nanotechnology, Nano Scale, Surface to Volume Ratio,
85	15/03/2016	Quantum confinement, Bottom-up Fabrication: sol –gel
86	18/03/2016	Top-down Fabrication: Chemical Vapour Deposition
87	19/03/2016	Characterisation of TEM

Signature of the Faculty

HYDERABAD
Lesson Plan for the Academic year 2015-16

Name of the Faculty member: Mrs.G.VIJAYA LAXMI
Subject: Engineering Physics Lab
Class: I-B.Tech

Dept: BASIC SCIENCES
Branch: ECE-C
No of labs per week:1

Lab no	Date & Month	Experiments to be done
1	13/08/15	Introduction -batch 1
2	20/08/15	Introduction -batch 2
3	27/08/15	Cycle – I batch - 1
4	03/09/15	Cycle – I batch -2
5	10/09/15	Cycle – I batch - 1
6	01/10/15	Cycle – I batch – 2
7	08/10/15	Cycle – I batch - 1
8	29/10/15	Cycle – I batch - 2
9	05/11/15	Cycle – 1 batch - 1
10	12/11/15	Cycle -1 batch - 2
11	19/11/15	Cycle – II batch -1
12	26/11/15	Cycle – II batch -2
13	03/12/15	Cycle – II batch -1
14	10/12/15	Cycle – II batch -2
15	17/12/15	Cycle – II batch -1
16	31/12/15	Cycle – II batch -2
17	07/01/16	Cycle – II batch -1
18	21/01/16	Cycle – II batch -2
19	28/01/16	Cycle – III batch -1
20	07/01/16	Cycle – III batch -2
21	21/01/16	Cycle – III batch -1
22	28/01/16	Cycle – III batch -2
23	04/02/16	Cycle – III batch -1
24	11/02/16	Cycle – III batch - 2
25	18/02/16	Cycle – III batch -1
26	25/02/16	Cycle – III batch - 2
27	03/03/16	Revision for batch – 1
28	10/03/16	Revision for batch - 2
29	17/03/16	INTERNAL LAB EXAM

Signature of the Faculty

LIST OF EXPERIMENTS

CYCLE – 1:

1. Dispersive power of the material of a prism – Spectrometer
2. Time constant of an R-C circuit
3. Torsional pendulum
4. Melde's experiment – Transverse and longitudinal modes

CYCLE -2:

5. Study the characteristics of LED and LASER sources
6. Newton's Rings – Radius of curvature of plano convex lens.
7. L-C-R circuit.
8. Magnetic field along the axis of current carrying coil – Stewart and method.

CYCLE – 3

9. Bending losses of fibres & Evaluation of numerical aperture of a given optical fibre.
10. Energy gap of a material of p-n junction.
11. Characteristics of a solar cell.