

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Faculty Name: - Dinesh Kumar
Year/Semester: 2nd/ 3rd

Subject Name: - Optics & Waves
Subject Code: - BS-201

LESSON PLAN

Sr. No.	Lecture No.	Topics To Be Covered	Tentative Date
1	L1	Unit – II Interference: Principle of Superposition, Conditions for Sustained interference	31/08/2021
2	L2	Young's double slit experiment	01/09/2021
3	L3	Division of wave-front: Fresnel's Biprism	03/09/2021
4	L4	Applications of Fresnel's Biprism	07/09/2021
5	L5	Division of amplitude: Interference due to reflected and transmitted light	08/09/2021
6	L6	Wedge-shaped thin film	10/09/2021
7	L7	Newton's rings and its applications	14/09/2021
8	L8	Michelson Interferometer and its applications.	15/09/2021
9	L9	Unit – III Diffraction and Polarisation: Types of diffraction	17/09/2021
10	L10	Fraunhofer diffraction at a single slit	21/09/2021
11	L11	Plane transmission diffraction grating: theory, secondary maxima and secondary minima	22/09/2021
12	L12	width of principal maxima, absent spectra	24/09/2021
13	L13	overlapping of spectral lines, determination of wavelength	28/09/2021
14	L14	Dispersive power and resolving power of diffraction grating.	29/09/2021
15	L15	Polarization: Polarization of transverse waves, Plane of polarization, Polarization by reflection	01/10/2021
16	L16	Double refraction, Nicol Prism	05/10/2021

17	L17	Quarter and half wave plate	06/10/2021
18	L18	Specific Rotation, Laurent 's half shade polarimeter	08/10/2021
19	L19	Biquartz polarimeter	12/10/2021
20	L20	Unit – IV Laser: Stimulated Absorption, Spontaneous and Stimulated Emission	19/10/2021
21	L21	Einstein's Coefficients and its derivation	22/10/2021
22	L22	Population Inversion, Direct and Indirect pumping	26/10/2021
23	L23	Pumping schemes, Main components of Laser	27/10/2021
24	L24	Gas lasers (He-Ne, CO ₂)	29/10/2021
25	L25	Solid state lasers (Ruby, Neodymium, semiconductor)	02/11/2021
26	L26	CONT..... Solid state lasers (Ruby, Neodymium, semiconductor)	03/11/2021
27	L27	Dye laser, Characteristics of Laser	09/11/2021
28	L28	Applications of Laser	12/11/2021
29	L29	Unit - I Waves: Travelling waves, Characteristics of waves, Mathematical representation of travelling waves	23/11/2021
30	L30	General wave equation, Phase velocity	24/11/2021
31	L31	Light source emit wave packets,	26/11/2021
32	L32	Wave packet and Bandwidth, Group velocity and real light waves.	30/11/2021
33	L33	Propagation of light waves: Maxwell's equations	03/12/2021
34	L34	Electromagnetic waves and constitutive relations, Wave equation for free-space	02/11/2021
35	L35	Uniform plane waves, Wave polarization, Energy density	03/12/2021
36	L36	the pointing vector and intensity, Radiation pressure and momentum	07/12/2021
37	L37	Light waves at boundaries, Wave incident	08/12/2021

		normally on boundary	
38	L38	Wave incident obliquely on boundary: law of reflection, Snell's law and reflection coefficients.	10/12/2021

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