Lesson Plan

Name of the Assistant/ Associate Professor: Dr. Paramjeet

Class and Section: B.Sc. II

Subject:

Session 2025-26

Week	Date	Topics
21 – 1	26 July 2025	Introduction to syllabus, (Optics + Thermodynamics)
28 July – 02 August		2nd Law of Thermodynamics, Carnot Engine. Absolute scale of temperature.
04 –	09 August	Absolute Zero, Entropy, T-S diagram.
11 –	16 August	Kelvin's heat flow, Joule's free Expansion, Joule – Thompson Experiment.
		Liquification of Gases, Air Pollution.
18 – 2	23 August	Clausius – Clapeyron latent heat equation.
25 –	30 August	Phase diagram – Tripple point.
		Maxwell's Thermodynamic Equations.
01 –	06 Sept.	Thermodynamic functions (U, F, H, G) and Relation b/w them.
08 –	13 Sept.	Speed of Transverse and Longitudinal waves in uniform media.
15 –	20 Sept.	
3		Fourier Analysis of complex waves.
22 –	27 Sept.	Fourier Transform and its properties.
		Applications of FT in (i) $f(x) = e^{-x^2/2}$
29 Sept – 04 Oct.		ii) $f(x) = 1$, $\lvert x \rvert < a$, or $f(x) = 0$, $\lvert x \rvert > a$.
06 –	13 Oct.	Matrix Methods in paraxial optics.
14 –	22 Oct.	DIWALI BREAK
23 –	31 Oct.	Translation and Refraction Matrices.
4		Derivation of Thin Lense Thick lense formula.
01 –	08 November	Unit planes and nodal planes.
		Aberration in optical System.
10 –	15 Nov.	Interference by Division of wavefront.
		Fresnel's Biprism + Applications in
		i) Determining wavelength of Na Light
17 –	22 Nov.	ii) " Thickness of mica sheet.
5		Lloyd mirror
24 –	29 Nov.	Phase change on Reflection.

18/7/2025

Lesson Plan

Name of the Assistant/ Associate Professor: Dr. PARAMJEET

Class and Section: B.Sc. III (VI^th Semester)

Subject: PHYSICS (Solid State Physics)

Session 2025-26

Week	Date	Topics
21 - 1	26 July 2025	Introduction to the subject
28 July - 02 August		Crystalline and Glassy forms of solid
		Liquid crystals and their properties
04 -	09 August	Crystal structure and periodicity
		Crystal Lattice and bases
11 -	16 August	Translational vector and crystal axes
		Unit cell and primitive cell.
18 - 2	23 August	Wigner Seitz primitive cell.
25 -	30 August	Symmetry operations for 2-D crystal
		Bravais lattice in 2-D & 3-D.
01 -	06 Sept.	Crystal planes and Miller Indices.
		Interplanner spacing.
08 -	13 Sept.	Crystal Structure of ZnS.
15 -	20 Sept.	" " " NaCl.
3		" " " C (Diamond)
22 -	27 Sept.	X-Ray Diffraction and Bragg's Law
		Experimental Methods of X-Ray Diffraction
29 Sept -	04 Oct.	K - Space with examples.
06 -	13 Oct	Reciprocal Lattice and it's significance.
14 -	22 Oct.	DIWALI BREAK
23 -	31 Oct.	Sessional Tests and Assignment Checks
4		Reciprocal Lattice Vectors for
01 -	08 November	i) Simple Cubic structure.
		ii) Reciprocal lattice vector for bcc.
10 -	15 Nov.	iii) " " " " Fcc.
		Specific heat introduction and Models
		Einstein's Theory of specific heat.
17 -	22 Nov.	Debye Model of specific heat
5		Classical Model of Specific heat
24 -	29 Nov.	Doubt clearing session
		Revision of Syllabus.

18/07/2025