

Teaching Plan (Session 2023-24)
 Class- B.Sc. II (Sem III) Teacher Name- Sunita Saini
Subject-Physics
 Period No. 5

Name of Paper - Statistical physics and thermodynamics - I, Optics

Sr. No.	Date/ Weekly	Topics to be covered
	1-5 Aug	SECTION-A Basic ideas of statistical physics, Scope of statistical physics, Basic ideas about probability.
	7-12 Aug	Distribution of four distinguishable particles in two compartment of equal size. Concept of macro states, microstates, thermodynamic probability, Effects of constraints on the system. Group Discussion about covered topics
	14-19 Aug	Distribution of n particles in two compartments. Class Test Topic Distribution of four distinguishable particles in two compartment of equal size.
	21-26 Aug	Equilibrium state of dynamic system. PPT on Topic Deviation from the state of maximum probability.
	28 Aug-02 Sep	Distribution of distinguishable n particles in k compartments of unequal sizes.
	4-9 Sep	SECTION – B Phase space and its division into elementary cells. Three kinds of statistics. Class Test Topic Distribution of distinguishable n particles in k compartments of unequal sizes.
	11-16 Sep	The basic approach in the three statistics, Maxwell Boltzman (MB) statistics applied to an ideal gas in equilibrium.
	18-23 Sep	Experimental verification of Maxwell Boltzman law of distribution of molecular speeds. Need for quantum statistics- Bose-Einstein (B.E.) statistics. PPT on Topic Derivation of Planck's law of radiation.
	25-30 Sep	Deduction of Wien's displacement law and Stefan's law from Planck's law, Fermi-Dirac (F.D.) statistics.

		Assignment on Topic Comparison of M.B., B.E. and F.D Statistics.
	2-7 Oct	<p style="text-align: center;">Paper - B OPTICS SECTION – A</p> <p>Interference: Concept of coherence, Spatial and temporal coherence. Coherence time, Coherence length, Area of coherence.</p> <p style="text-align: center;">Assignment on Topic</p> <p>Conditions for observing interference fringes (BOYS). Interference by wave front division and amplitude division. Michelson's interferometer-working, Principle and nature of fringes.(GIRLS)</p>
	9-14 Oct	Interference in thin films, Role of interference in anti-reflection.
	16-21 Oct	High reflection dielectric coatings. Multiple beam interference.
	23-28 Oct	MST
	30 Oct - 4 Nov	Fabry-Perot interferometer, Nature of fringes, Newton Rings.
	6-11 Nov	<p style="text-align: center;">Class Test</p> <p>Topic Michelson's interferometer-working, Principle and nature of fringes.</p>
	13-18 Nov	Discussion about topics of Assignment
	20-25 Nov	REVISION