Dr. BhimRao Ambedkar Govt. College Jagdishpura (Kaithal)

Lesson Plan: (from 22 July 2024 to 22 NOVEMBER 2025)

Name of Assistant Professor**: Dr. Meena Devi**
Class and Section**: BSc Physical Sciences I**
Subject**: Physics (B23 PHY-101 MECHANICS)**

Dates	Lesson Plan
July Week-4	**Unit-1:** Introducation, Rigid body, Moment of Inertia, Radius of Gyration
August : Week -1	Theorems of perpendicular and parallel axis (with proof), Moment of Inertia of ring, Disc, Angular Disc
Week -2	Solid cylinder, Solid sphere, Hollow sphere, Rectangular plate, Square plate, Solid cone, Triangular plate, Torque, Rotational Kinetic Energy, Angular momentum,
Week -3	Law of conservation of angular momentum, Rolling motion, condition for pure rolling,
Week -4	Acceleration of body rolling down an inclined plane, Fly wheel, Moment of Inertia of an irregular body.
September : Week -1	**UNIT 2:** **Elasticity:** Deforming force, Elastic limit, stress, strain and their types, Hooke's law, Modulus of rigidity, Relation between shear angle and angle of twist, elastic energy stored/volume in an elastic body.
Week -2	Elongation produced in heavy rod due to its own weight and elastic potential energy stored in it, Tension in rotating rod, Poisson's ratio and its limiting value, Elastic Constants and their relations.
Week -3	Torque required for twisting cylinder, Hollow shaft is stiffer than solid one. Bending of beam, bending moment and its magnitude,
Week -4	Flexural rigidity, Geometrical moment of inertia for beam of rectangular cross-section and circular cross-section.
Week - 5	Bending of cantilever (loaded by a weight W at its free end), weight of cantilever uniformly distributed over its entire length.
OCTOBER : Week- 1	Dispersion of a centrally loaded beam supported at its ends, determination of elastic constants for material of wire by Searle's method.
Week -2	Revision
Week -3	**UNIT 3:Special Theory of Relativity:** Michelson's Morley experiment and its outcomes, Postulates of special theory of relativity
Week -4	Lorentz Transformations, Simultaneity and order of events, Lorentz contraction, Time dilation.
Week -5	**Diwali Vacations (27 October-03 November)**
November Week -2	Relativistic transformation of velocity, relativistic addition of velocities,
Week -3	Variation of mass-energy equivalence.
Week -4	Revision
23 November 2024	EXAM ONWARD

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Lesson Plan: (from 22 July 2024 to 22 NOVEMBER 2025)

Name of Assistant Professor: Dr. Meena Devi

Class and Section: BSc Physical Sciences II

Subject: Physics- B23 PHY-301 Thermodynamics & Statistical Physics

Dates	Lesson Plan
July Week-4	**Unit-1:** Thermodynamic-systems
August : Week -2	variables and equation of state, thermal equilibrium, Zeroth law of thermodynamics;
Week -3	Concept of heat, work and its sign (work done- by the system on the system) & its path dependence, First law of thermodynamics- its significance and limitations,
Week -4	internal energy as a state function, different types of process-isochoric process,
Week -5	isobaric process, adiabatic process, isothermal process, cyclic process, Reversible and irreversible process,
September : Week -1	First law and cyclic process; Second law of thermodynamics and its significance, Carnot theorem;
Week -2	Absolute scale of temperature, Absolute Zero and magnitude of each division on work scale and perfect gas scale,
Week -3	Joule's free expansion, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, conclusions and explanation,
Week -4	analytical treatment of Joule Thomson effect, Entropy, calculations of entropy of reversible and irreversible process,
OCTOBER : Week- 1	T-S diagram, entropy of a perfect gas, Nernst heat law (third law of thermodynamics);
Week -2	Liquefaction of gases, (oxygen, air, hydrogen and helium) solidification of helium below 4K, Cooling by adiabatic demagnetization
Week -3	**UNIT 2 : THERMODYNAMICS-II** Derivation of Clausius-Clapeyron and Clausius latent heat equations and their significance,
Week -4	specific heat of saturated vapours, phase diagram and triple point of a substance, development of Maxwell thermodynamical relations,
Week -5	**Diwali Vacations (27 October-03 November)**
November Week -2	Thermodynamical functions: Internal energy (U), Helmholtz function (F), Enthalpy (H), Gibbs function (G) and the relations between them, derivation of Maxwell thermodynamical relations from thermodynamical functions,
Week -3	Application of Maxwell relations: relations between two specific heats of gas, Derivation of ClausiusClapeyron and Clausius equation,
Week -4	Revision
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Lesson Plan: (from 22 July 2024 to 22 NOVEMBER 2025)

Name of Assistant Professor**: Dr. Meena Devi**
Class and Section**: BBA- I**
Subject**: Physics B23 PHY-104 Physics Fundamentals –I**

Dates	Lesson Plan
July Week-4	**Unit-1:** Introducation, Physics-Nature, scope & excitement, Major discoveries in physics,
August : Week -1	major contribution by Indian Physicists, Fundamental physical constants,
Week -2	Physics in relation to other sciences, impact of physics on society and on latest development in science & technology.
Week -3	System of Measuring Units-Need for measurement, measuring process,
Week -4	concept of mass, length, time; Fundamental and derive units, system of units, concepts of error, types of error (only definition), Accuracy and precision in measurement,
September : Week -1	least count and applications of measuring instruments -Vernier caliper, Screw Gauge **UNIT 2:** Motion of objects in one dimension- position of the object,
Week -2	origin/reference point, frame of reference, definitions and examples of motion in one, two and three dimension,
Week -3	Scalar and Vector quantities, description of motion along a straight line- distance and displacement, uniform motion and nonuniform motion,
Week -4	average and instantaneous speed, average and instantaneous velocity, acceleration; graphical analysis of straight line motion
Week - 5	distance- time graph, velocity-time graph, equation of motions and their applications. **UNIT 3:** Causes of motion- concept of force, Newton's Ist law of motion,
OCTOBER : Week- 1	inertia and mass; Newton's 2nd law of motion, momentum and force; 3rd law of motion, daily life applications of Newton's laws of motion.
Week -2	Universal law of gravitation and its importance, acceleration due to gravity and free fall of a body; mass and weight of an object on earth and moon,
Week -3	concept of thrust and pressure and importance in daily life, buoyancy and Archimedes principle-the physics behind floating of objects on water.
Week -4	**UNIT 4:** Work, energy, types of energy-Kinetic energy and Potential energy, P.E. of an object at a height;
Week -5	**Diwali Vacations (27 October-03 November)**
November Week -2	law of conservation of energy and its applications. Conservation of linear and angular momentum,
Week -3	collision (elastic and inelastic) and conservation laws in collisions- importance in daily life; concepts of center of mass-Physics behind cycling, rock climbing and skating.
Week -4	Revision
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