

Lesson Plan

July - Dec 2025

Name - Reena

Subject - Physics Minor

Class - B.Sc. 1st sem

Paper Code - 24PHY401MIO1

Month	Unit	Topics
July - August	Unit 1 & 2	Everyday Activities related to Force, Weight, Work, Energy, Power and centrifuge Washing Machine. Variation of Boiling Point with Pressure, Pressure Cooker, cooling by Expansion, Refrigerator, air conditioner.
September	Unit - 2 & 3	Bernoulli Principle, Bunsen Burner, Aeroplane. Sound Waves, Doppler Effect, Power of Lens, Long Sight and Short Sight, Microscope, Telescope.
October	Unit 3 & 4	Binocular camera, Video Camera. Working of Tube light and fan, Kilowatt hour, Fuse and heating elements
November	Unit - 4	Microwave Oven, Electric Heater, Photoelectric effect. Revision

Reena
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Lesson Plan July - Dec 2025

Name - Reena

Class - B.Sc. 1st sem

Subject - Physics

Paper - 24PHY401DS01

Month	Unit	Topics
July - August	I	Mechanics of single and system of particles, Conservation law of linear momentum, angular momentum and mechanical energy, Constrained motion, Work Energy Theorem, Conservative and non conservative forces, Energy diagram, Stable & unstable equilibrium, Force as gradient of potential energy.
September	II	Degree of freedom and generalized co-ordinates, Transformation equations, Components of velocity and acceleration in cylindrical and spherical co-ordinate systems, Hamilton's Variational Principle, Lagrange's equation of motion, Linear harmonic oscillator, Simple Pendulum, Atwood's Machine.
October	III	Rotation of Rigid body, moment of Inertia, Torque, angular momentum, K.E., Theorems of perpendicular and parallel axis, moment of inertia of different shapes, acceleration of a body rolling down an inclined plane, Motion involving both translation and rotation.
November	IV	Non-Inertial frames, uniformly rotating frame, centrifugal force, Coriolis force & its applications, Michelson-Morley experiment, Postulates of Special Theory of relativity, Lorentz transformation, Time dilation, Mass-energy equivalence, Relativistic Doppler effect, Energy momentum four vector.

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Lesson Plan

July - Dec 2025

Name - Reena

Class - B.Sc. 5th sem

Subject - Physics

Paper - PHYS01 & PHYS02

Month	Unit	Topics
July - August	I & II from PH 501	Crystalline and glassy solids, liquid crystals, crystal structure, basis vectors, unit cell and its types, symmetry operations in 2-D crystal, Bravais lattice in 2-D & 3-D. Crystal planes, Miller indices, interplanar spacing, Crystal structure of ZnS, NaCl and diamond, Bragg's Equation, X-ray diffraction methods.
September	III PH 501 I PH 502	Reciprocal lattice and its significance, reciprocal lattice to sc, bcc and fcc. Specific heat of solids: classical, Einstein & Debye Model. Failure of classical E.M. Theory, old quantum theory, Photon, photoelectric effect, Compton effect, Inadequacy of old quantum theory.
October	I & II PH 502	de-Broglie hypothesis and its experimental verification, Phase velocity, Group velocity, Heisenberg uncertainty Principle from wave particle duality, Electron diffraction from a slit. Time dependent Schrodinger wave equation, wave function and its significance, observable and operator, Harmonic oscillator.
November	III PH 502	Application of Schrodinger equation for solution of i) Free particle in one dimensional box ii) Potential step iii) Potential barrier Revision

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