

Lesson Plan: Applied Physics-I (L: 2, P: 2)

Session- 2026-27(Semester-I)

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Class : CE-B, ME-B ,TD

WEEKLY DISTRIBUTION

Week	Theory Topics	Practical Work
	UNIT I: Unit and Dimensions	
1	1.1 Definition of Physics 1.2 Physical quantities: fundamental & derived 1.3 Systems of Units: CGS, FPS, MKS, SI	1. Familiarization with instruments: vernier caliper, screw gauge, spherometer, travelling microscope
2	1.4 Dimensions, dimensional formulae and SI units of: distance, displacement, area, volume, density, velocity, acceleration	2. To find diameter of a solid cylinder using vernier caliper 3. Volume of beaker using vernier caliper
3	1.4 continued: linear momentum, force, impulse, work, power, energy, pressure, surface tension, stress, strain	4. To find the diameter of wire using screw gauge 5. To find thickness of paper using screw gauge
4	1.5 Dimensional equations, principle of homogeneity 1.6 Applications of dimensional analysis	6. To determine thickness of glass strip using a spherometer 7. Radius of curvature using spherometer
	UNIT II: Force and Motion	
5	2.1 Scalars and vectors: definition, examples, representation, types of vectors	8. Verify Parallelogram Law of Force
6	2.2 Vector algebra: addition, Triangle & Parallelogram law 2.3 Scalar and vector product	9. Determine atmospheric pressure using Fortin's Barometer
7	2.4 Force and its units, resolution of force 2.5 Newton's laws of motion: statements and examples	10. Determine force constant of spring using Hooke's law

Week	Theory Topics	Practical Work
8	2.6 Linear momentum, conservation of momentum, impulse 2.7 Circular motion definitions, formulas	11. Measure room temperature using thermometer and convert to other scales
9	2.7 continued: centripetal & centrifugal forces, banking of road 2.8 Rotational motion: definition, examples	Lab Revision – Any 2 prior practical's as per student need
10	2.9 Torque, angular momentum, moment of inertia and significance	Lab Worksheet or Demo – Explanation of rotational motion & torque with basic setups
11	UNIT III: Work, Power and Energy 3.1 Work: definition, formula, types 3.2 Friction: definition, applications	Numerical practice: Work, Power, Energy – based on lab data or simple examples
12	3.3 Power: definition, formula, units 3.4 Energy: definition, SI unit, energy transformation examples	Group discussion on daily-life examples of energy transformation
13	3.5 Kinetic energy: definition, examples, formula & derivation 3.6 Potential energy: definition, examples, derivation	Worksheet practice: KE and PE derivations and numerical based on formulas
14	3.7 Law of conservation of mechanical energy (with derivation) 3.8 Simple numerical problems	Repeat/Redo practical's based on student's weak areas
15	UNIT IV & V Combined Revision 4.1 to 4.5: Elasticity, stress-strain, pressure, surface tension, viscosity 5.1 to 5.6: Heat, temperature, thermometer, heat transfer modes, radiation	Final Practical Evaluation (any 2–3 experiments from syllabus) + Viva or worksheet