Lesson Plan

Name : Sanjeev Kumar
Discipline : Mechaical, Civil , C.S.E. & Chemical
Semester : 1st
Subject : Applied Physics-I (220013)
Duration : 16 weeks (04/08/2025 to 26/11/2025)
Work Load : 2 Lectures and 01 Practical per Week

Week	Theory			Practical	
	Lecture Days	Topic (including assignment/ test)		Pr	Topic
1st	1st	Definition of Physics, Physical Quantities; Fundamental & Derived Quantities		1	Familiarization of measurement instruments and their parts (for example – Vernier caliper, Screw gauge, Spherometer, Travelling microscope etc.), and taking a reading. (Compulsory to all students).
	2nd	Units; Fundamental & Derived Units System of units (FPS, CGS and SI units)			
2nd	3rd	Dimensional Formulae SI units of physical quantities		2nd	To find diameter of solid cylinder using a Vernier calliper.
	4th	Principle of homogeneity of dimensions Dimensional Equations			
3rd	5th	Applications of Dimensional Analysis Checking correctness of equation		3rd	To find internal diameter and depth of a beaker using a Vernier caliper and hence find its volume.
	6th	Conversion of numerical value from one system of unit into another. (force, work, acceleration)			
4th	7th	Revision of unit 01.		4th	To find the diameter of wire using screw gauge.
	8th	Scalar and Vector Quantities Type of Vectors Vector Algebra, Triangle & Parallelogram Law(Statements Only), Scalar & Vector Product			
5th	9th	Scalar & Vector Product (Contd.), Force and its units, resolution of force (statement and formula only)		5th	To find thickness of paper using screw gauge.
	10th	Newton's laws of motion (statement and examples) **Assignment 01**			
6th	11th	Linear momentum, Law of conservation of linear momentum (statement and examples), Impulse		6th	To determine the thickness of glass strip using a spherometer.
	12th	Definition of angular displacement, angular velocity, angular acceleration, frequency, time period; Relation between linear and angular velocity			
7th	13th	**Sessional 01**		7th	To determine radius of curvature of a given spherical surface by a sphero meter.
	14th	Centripetal and Centrifugal forces (definition and formula only), application of centripetal force in banking of road.			
8th	15th	Rotational Motion definition & examples, Definition of torque, angular momentum and its		8	To verify parallelogram law of

		physical significance		force.
	16th	Definition of moment of inertia and its physical significance. Revision of unit 02.		
9th	17th	Work, definition, unit, types with examples Friction– definition and its simple daily life applications	9	To determine the atmospheric pressure at a place using Fortin's Barometer.
	18th	Power- definition, formula and units Energy- definition and its SI unit, examples of transformation of energy.		
10th	19th	Kinetic energy- definition, examples, formula and its derivation Potential energy- definition, examples, formula and its derivation	10	To determine force constant of spring using Hooke's law.
	20th	**Assignment 02** Law of conservation of mechanical energy for freely falling bodies (with derivation)		
11th	21st	Revision & Simple numerical problems based on formula of Power and Energy	11	Measuring room temperature with the help of thermometer and its conversion in different scale.
	22nd	**Sessiona-02**		
12th	23rd	Elasticity and plasticity- definition, deforming force, restoring force, example of elastic and plastic body Definition of stress and strain, Hooke's law, modulus of elasticity.	12	Revision & Viva
	24th	Pressure(Def. & Units), Types of Pressure & Pascal's Law.		
13th	25th	Surface tension- definition, SI unit, applications of surface tension.Effect of temperature on surface tension Viscosity: definition, unit, examples, effect of temperature on viscosity	13	Revision & Viva
	26th	Definition of heat and temperature (on the basis of kinetic theory) Difference between heat and temperature Principle and working of mercury thermometer		
14th	27th	Modes of transfer of heat- conduction, convection and radiation with examples.	14	Revision & Viva
	28th	(Contd.) Modes of transfer of heat- conduction, convection and radiation with examples. Properties of heat radiation **Assignment -03**		
15th	29th	Different scales of temperature and their relationship & Revision	15	Revision & Viva
	30th	Revision		
16th	31th	**Sessional-03**		Revision & Viva
	32th	Revision		