

Government Polytechnic Panchkula, Sector

Lesson Plan

Name- Sudesh Sharma

Discipline- Applied Science

Semester – 1st Sem

Subject –Applied Physics

Duration –16 weeks (2022-23)

Work load (per week):- lectures-02, and practicals-02

Week	Theory		Practical	
	Lect. day	Topic	Practical day	Topic
1 st	1 st	Definition of Physics, physical quantities- fundamental and derived	1 st	Familiarization of measurement instruments and their parts (for example - vernier calliper, screw gauge, spherometer, travelling microscope etc.), and taking a reading. (compulsory to all students)
	2 nd	Units: fundamental and derived		
2 nd	1 st	System of units: CGS, FPS, MKS, SI	1 st	To find diameter of solid cylinder using a vernier calliper
	2 nd	Dimension, dimensional formulae and SI units of physical quantities- distance, displacement, area, volume, density, velocity, acceleration, linear momentum, force, impulse, work, power, energy, pressure, surface tension, stress, strain)		
3 rd	1 st	Dimensional equations, principle of homogeneity of dimensional equation	1 st	To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume.
	2 nd	Application of dimensional analysis: checking the correctness of physical equation, conversion of system of unit (force, work, acceleration)		

4th	1 st	<p>UNIT II</p> <p>Force and Motion</p> <p>2.1 Scalar and vector quantities– definition and examples, representation of vector, types of vector (unit vector, position vector, co-initial vector, collinear vector, co-planar vector)</p>	1 st	To find the diameter of wire using screw gauge
	2 nd	Vector algebra- addition of vectors, Triangle & Parallelogram law (statement and formula only),		
5th	1 st	Scalar and vector product (statement and formula only)	1 st	To find thickness of paper using screw gauge.
	2 nd	Force and its units, resolution of force (statement and formula only)		
6th	1 st	Newton's laws of motion (statement and examples)	1 st	To determine the thickness of glass strip using a spherometer
	2 nd	Linear momentum, Law of conservation of linear momentum (statement and examples), Impulse		
7th	1 st	<p>Circular motion: definition of angular displacement, angular velocity, angular acceleration, frequency, time period; Relation between linear and angular velocity, centripetal and centrifugal forces (definition and formula only), application of centripetal force in banking of road</p>	1 st	To determine radius of curvature of a given spherical surface by a spherometer.
	2 nd	<p>Rotational motion: definition with examples</p> <p>Definition of torque, angular momentum, moment of inertia and its physical significance</p>		
8th	1 st	Work- definition, symbol, formula and SI unit, types of work (zero work, positive work and negative work) with example	1 st	To verify parallelogram law of force
	2 nd	Friction– definition and its simple daily life applications		

9th	1 st	Power- definition, formula and units	1 st	To determine the atmospheric pressure at a place using Fortin's Barometer
	2 nd	Energy- definition and its SI unit, examples of transformation of energy.		
10th	1 st	Kinetic energy- definition, examples, formula and its derivation	1 st	To determine force constant of spring using Hooke's law
	2 nd	Potential energy- definition, examples, formula and its derivation		
11th	1 st	Law of conservation of mechanical energy for freely falling bodies (with derivation)	1 st	Measuring room temperature with the help of thermometer and its conversion in different scale.
	2 nd	Simple numerical problems based on formula of Power and Energy		
12th	1 st	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	1 st	Revision and File Checking
	2 nd	Pressure- definition, atmospheric pressure, gauge pressure, absolute pressure, Pascal's law Surface tension- definition, SI unit, applications of surface tension, effect of temperature on surface tension Viscosity: definition, unit, examples, effect of temperature on viscosity		
13th	1 st	Definition of heat and temperature (on the basis of kinetic theory)	1 st	Revision and File Checking
	2 nd	Difference between heat and temperature		

14th	1 st	<i>Principle and working of mercury thermometer</i>	1 st	<i>Revision and File Checking</i>
	2 nd	<i>Modes of transfer of heat-conduction, convection and radiation with examples.</i>		
15th	1 st	<i>Properties of heat radiation Different scales of temperature and their relationship</i>	1 st	<i>Viva-Voice</i>
	2 nd	<i>Revision</i>		
16th	1 st	<i>Revision</i>	1 st	<i>Viva-Voice</i>
	2 nd	<i>Revision</i>		