

Lesson Plan

Name : Ms. Sarita
Discipline : Electrical Engg. & Civil Engg
Subject : Applied Physics
Code : 220013/210013
Duration : 15 weeks (1Sept 2023 to Dec 2023)
Work Load : 2 Lectures, and 1 practical per week

	Theory		Practical
Week	Lecture	Topic	Topic
1 st	1 st	Introduction about physics, Physical quantities, Fundamental and derived physical quantities	1. Introduction about lab Familiarization of measurement instrument and their parts (for example Vernier caliper, screw gauge, sphere meter, travelling microscope etc.), and taking a reading (compulsory to all students)
	2 nd	FPS, CGS and SI system of units	
2 nd	1 st	Dimensions and dimensional formulae of physical quantities Dimensional formulae Distance, area, volume, velocity, acceleration, momentum, force etc.	1. To find diameter of solid cylinder using a Vernier caliper
	2 nd	Dim. Formula of work, power, energy, surface tension, stress, strain, moment of inertia Principle of homogeneity of dimensions, checking of correctness of equation	
3 rd	1 st	Conversion from one system of units to other (force, work, acceleration)	3. To find internal diameter and depth of a beaker using a Vernier caliper and hence find its volume.
	2 nd	Revision of unit 1/ Problem solving/ Numericals	
4 th	1 st	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)	Checking of practical files
	2 nd	Vector algebra- addition of vectors, Triangle &Parallelogram law (statement and formula only)	
5 th	1 st	Scalar and vector product (statement and formula only) Force and its units, resolution of force (statement and formula only)	5. To find the diameter of wire using screw gauge
	2 nd	Newton’s laws of motion (statement and examples)	
6 th		1 st SESSIONAL TEST (UNIT 1 & UNIT 2.1 – 2.5)	
7 th	1 st	Conservation of linear momentum Impulse and its examples Introduction to Circular motion, Angular displacement, angular velocity, angular Acceleration and relation between linear and angular system.	6. To find thickness of paper using screwgauge.
	2 nd	Centripetal and centrifugal forces Banking of roads (application of centrifugal force) Rotational Motion	

8th	1st	<p>Work- definition, symbol, formula and SI unit, types of work (zero work, positive work and negative work) with example</p> <p>Friction– definition and its simple daily life applications</p>	Checking of Practical Files
	2nd	<p>Power- definition, formula and units</p> <p>Energy- definition and its SI unit, examples of transformation of energy</p>	
9th	1st	<p>Kinetic energy- definition, examples, formulaand its derivation</p> <p>Potential energy- definition, examples, formulaand its derivation</p>	8. To determine radius of curvature of a given spherical surface by a sphero meter
	2nd	<p>Law of conservation of mechanical energy for freely falling bodies (with derivation)</p> <p>Simple numerical problems based on formula of Power and Energy</p>	
10th	2ND SESSIONAL TEST (UNIT 2.5 – 2.9 & UNIT 3)		
11th	1st	<p>Elasticity and plasticity- definition, deforming force, restoring force, example of elastic and plastic body</p> <p>Definition of stress and strain, Hooke’s law, modulus of elasticity</p>	9. To determine the thickness of glassstrip using a spherometer
	2nd	<p>Pressure- definition, atmospheric pressure, gauge pressure, absolute pressure, Pascal’s law</p> <p>Surface tension- definition, SI unit, applications of surface tension, effect of temperature on surface tension</p> <p>Viscosity: definition, unit, examples, effect of temperature on viscosity</p>	
12th	1st	Definition of heat and temperature (on the basis of kinetic theory) Difference between heat and temperature	10. To determine force constant of spring using Hooke’s law
	2nd	Principle and working of mercury thermometer Modes of transfer of heat- conduction, convection and radiation with examples	
	3rd		
13th	1st	<p>Properties of heat radiation</p> <p>5.6 Different scales of temperature and their relationship</p>	11. Measuring room temperature with the help of thermometer and its conversion in different scale
	2nd	Revision/Class Test	
14th		3rd SESSIONAL TEST (UNIT 4 & UNIT 5)	
15th	1st	Oral test	Revision & Checking of practical note books
	2nd	Written test	