Lesson Plan

Name of Faculty **: Suman**
Discipline **: Applied Science**
Year **: 1st Semester (Agriculture, Civil , Electrical , E&C Engg)**
Subject **: Applied Physics-I**
Lesson Plan Duration: Oct. 2022 to Jan. 2023
Work Load (Lecture/ Practical) per week (In hours): Lecture – 2, Practical – 4)

APPLIED PHYSICS – I (180013)

Week	Theory		Practical	
	Lecture Day	**Topic (Including Assignment / Test)**	**Practical Day**	**Topic**
1	1	Basic about Physics and broad area,Physical quantities,Basic concept,Types of Physical Quantities.	1	General Introduction and Familiarization with Lab apparatus
	2	Units - fundamental and derived units, systems of units (FPS, CGS and SI units)		
2	3	Dimensions and dimensional formulae of physical quantities (distance, displacement, area, volume, velocity, acceleration	2	To find diameter of solid cylinder using a vernier calliper.
	4	Dimensional formulae of physical quantities (momentum, force, impulse, work, power, energy, surface tension, stress, strain)		
3	5	Principle of homogeneity of dimensions, Dimensional equations, Applications of dimensional equations; checking of correctness of equation,	3	To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume.
	6	Conversion from one system of units to other for force, work,Acceleration		
4	7	**Assignment -01**	4	To find the diameter of wire using screw gauge
	8	Scalar and vector quantities – examples, representation of vector,Types of Vector (unit vector,position vector,co-intial vector,collinear vector,co-planar vector)		
5	9	Addition of Vectors, Triangle and Parallelogram law (Statement only), Scalar and Vector Product(statement and formula only)	5	Revision and Viva Voice
	10	Force and its units, concept of Resolution of force. Newton's law of motion (Statement and examples)		
6	11	**Sessional Test-01**	6	To find thickness of paper using screw gauge
	12	Linear momentum, Law of conservation of linear momentum (statement and examples), Impulse		
7	13	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)	7	To determine the thickness of glass strip using a spherometer
	14	Application of centripetal force in banking of road, Rotational motion: definition with examples		
8	15	Definition of torque, angular momentum, moment of inertia and its physical significance	8	Revision and Viva Voce
	16	**Assignment-02**		
9	17	Work (Definition, Symbol, Formula and SI units) types of work (zero work, positive work and negative work) with example	9	To determine radius of curvature of a given spherical surface by a spherometer.
	18	Friction– definition and its simple daily life applications,Power- definition, formula and units		
10	19	Energy and its units,Example of transformation of energy, Kinetic energy & Potential Energy with examples and their derivation	10	To verify parallelogram law of force
	20	Kinetic energy & Potential Energy with examples and their derivation		
11	21	Law of conservation of mechanical energy for freely falling bodies (With Derivation),Simple numerical problems based on formula of Power and Energy	11	Revision and Viva Voce
	22	**Sessional Test 2**		
12	23	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	To determine the atmospheric pressure at a place using Fortin's Barometer
	24	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		
13	25	**Assignment-03**	13	To determine force constant of spring using Hooke's law
	26	Viscosity: definition, unit, examples, effect of temperature on viscosity,Definition of heat and temperature (on the basis of kinetic theory)		
14	27	Difference between heat and temperature,Principle and working of mercury thermometer,Modes of transfer of heat- conduction, convection and radiation with examples.	14	Revision and Viva Voce
	28	Modes of transfer of heat- conduction, convection and radiation with examples.Properties of heat radiation ,Different scales of temperature and their relationship		
15	29	**Sessional-03**	15	Measuring room temperature with the help of thermometer and its conversion
	30	Revision of Unit 1 &2		
16	31	Revision of Unit 3 &4	16	Revision of all Experiments
	32	Revision of Unit 5		