LESSON PLAN

Name of The Faculty **: Parul Sharma**

Discipline **: Common**

Semester **: 1st**

Subject **: Applied Physics – I**

Lesson Plan Duration : **15 weeks**

Work Load (Theory/Practical) per week (in Hours) : **L - 02 , P - 02**

Week	Theory		Practical	
	Lecture day	**Topic (including assignment/test)**	**Practical day**	**Topic**
1	1	● **Unit – I (Unit & Dimensions)** ● Introduction ● Definition of Physics, Physical Quantities ● Fundamental and Derived Quantities	1	**Experiment - 1** ● Familiarization of measurement instruments & their parts & taking a reading. – Introduction
	2	● Units: Fundamental and Derived units ● System of units: CGS, FPS, MKS, SI ● Dimension & Dimensional formulae of physical quantities	2	● Familiarize with the parts – vernier calliper,screw gauge,spherometer,travelling microscope etc.
2	3	● SI units of physical quantities ● Dimensional equations, Principle of homogeneity of dimensions	3	● Take the readings & perform
	4	● Applications of dimensional equations; Checking of correctness of equation ● Conversion of system of unit	4	**Experiment - 2** ● To find diameter of solid cylinder using a vernier calliper - Introduction
3	5	● **Unit – II (Force & motion)** ● Introduction ● Scalar and vector quantities –(Definition and examples),	5	● Take the readings & perform the experiment
	6	● Vector Algebra - Addition of Vectors, ● Triangle & Parallelogram Law ● Scalar and Vector Product (statement and formula only)	6	● Revise the experiment
4	7	● **Class Test** ● **ASSIGNMENT**	7	**Experiment - 3** ● To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume.- Introduction
	8	● Force and its units ● Concept of Resolution of force ● Newton's Law of motion (Statement and examples),	8	● Take the readings

5	9	● **First Sessional Test**	9	● Do calculation to find its volume & revise theexperiment
	10	● Linear Momentum ● Law of Conservation of Linear momentum ● Impulse PTM-I	10	**Experiment - 4** ● To find the diameter of wire using screw gauge - Introduction
6	11	● Circular motion ● Definition of angular displacement, angular velocity, angular acceleration, frequency, time period	11	● Perform experiment & take the readings ● Revise the experiment
	12	● Relation between linear and angular velocity ● Centripetal forces (definition and formula only) ● Centrifugal forces (definition and formula only)	12	**Experiment - 5** ● To find thickness of paper using screw gauge.-Introduction
7	13	● Application of centripetal force in Banking of roads (derivation for angle of banking)	13	● Perform experiment & take the readings
	14	● Rotational Motion : Definition with examples ● Definition of Torque ● Definition of angular momentum ● Moment of inertia & its physical significance	14	● Revise the experiment
8	15	● **Unit – III (Work, Power and Energy)** Introduction ● Work (Definition, Symbol, Formula and SI units) ● Types of work with example	15	**Experiment - 6** ● To determine the thickness of glass strip using a spherometer- Introduction
	16	● **Class Test** ● **ASSIGNMENT**	16	● Perform experiment & take the readings
9	17	● Friction – definition & its simple daily life applications ● Energy – Definition & its SI unit ● Examples of transformation of energy	17	● Revise the experiment
	18	● Kinetic Energy (Definition,formula,examples and its derivation) ● Potential Energy (Definition,formula,examples and its derivation)	18	**Experiment - 7** ● To determine radius of curvature of a given spherical surface by a spherometer.-Introduct ion

10	19	● Law of conservation of mechanical energy for freely falling bodies (With Derivation)	19	● Perform experiment & take the readings
	20	● Simple Numerical problems based on formula of Power and Energy	20	● Revise the experiment
11	21	● **Second Sessional Test**	21	**Experiment - 8** ● To verify parallelogram law of forces- Introduction
	22	● **Unit – IV (Properties of Matter)** ● Introduction ● Elasticity and plasticity,Deforming force, Restoring force, ● Example of Elastic and plastic body ● Definition of Stress and strain PTM-II	22	● Perform experiment & take the readings
12	23	● Hooke's law ● Modulus of Elasticity ● Pressure – definition ● Atmospheric pressure ● Gauge pressure ● Absolute pressure	23	● Revise the experiment
	24	● **ASSIGNMENT** ● **Class Test**	24	**Experiment - 9** ● To determine the atmospheric pressure at a place using Fortin's Barometer- Introduction
13	25	● Pascal's law ● Surface tension: definition, its units ● Applications of surface tension ● Effect of temperature on Surface Tension ●Viscosity: definition, units, effect of temperature on viscosity	25	● (Setting up the apparatus) ● Perform experiment & take the readings
	26	● **Unit – V (Heat and temperature)** - Introduction ● Definition of heat and temperature ● Difference between heat and Temperature	26	**Experiment - 10** ● To determine force constant of spring using Hooke's law- Introduction
14	27	● Principle and working of mercury thermometer ● Modes of transfer of heat (Conduction, convection and radiation with examples).	27	● (Setting up the apparatus) ● Perform experiment & take the readings

	28	● Properties of heat radiation ● Different scales of temperature and their relationship		**<u>Experiment - 11</u>** ● Measuring room temperature with the help of thermometer and its conversion in different scale- Introduction
15	29	● **Third Sessional Test**	29	● Perform experiment & take the readings
	30	● Analysis of Test ● PTM-III	30	Revision of Experiment