

LESSON PLAN

Name of The Faculty : **Dinesh Yadav**

Discipline : **Comp Engg./Civil Engg./Food Tech./Mech Engg.**

Semester : **1st**

Subject : **Applied Physics – I**

Lesson Plan Duration : **16 weeks (From August 04, 2025 to 26 November, 2025)**

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	<ul style="list-style-type: none"> ● Unit – I (Unit & Dimensions) ● Introduction ● Definition of Physics, Physical Quantities ● Fundamental and Derived Quantities 	1	<ul style="list-style-type: none"> ● Experiment - 1 ● Familiarization of measurement instruments & their parts & taking a reading. – Introduction
	2	<ul style="list-style-type: none"> ● Units: Fundamental and Derived units ● System of units: CGS, FPS, MKS, SI 	2	<ul style="list-style-type: none"> ● Familiarize with the parts – vernier calliper, screw gauge, spherometer, travelling microscope etc.
2	3	<ul style="list-style-type: none"> ● Dimension ● Dimensional formulae of physical quantities ● SI units of physical quantities 	3	<ul style="list-style-type: none"> ● Take the readings & perform
	4	<ul style="list-style-type: none"> ● Principle of homogeneity of dimensions ● Dimensional equations, ● Applications of dimensional equations; Checking of correctness of equation 	4	<ul style="list-style-type: none"> ● Experiment - 2 ● To find diameter of solid cylinder using a vernier calliper - Introduction
3	5	<ul style="list-style-type: none"> ● Conversion of system of unit ● Class Test 	5	<ul style="list-style-type: none"> ● Take the readings & perform the experiment
	6	<ul style="list-style-type: none"> ● Unit – II (Force & motion) ● Introduction ● Scalar and vector quantities –(Definition and examples), 	6	<ul style="list-style-type: none"> ● Revise the experiment
4	7	<ul style="list-style-type: none"> ● Vector Algebra - Addition of Vectors, ● Triangle & Parallelogram Law (Statement only), 	7	<ul style="list-style-type: none"> ● Experiment - 3 ● To find internal diameter and depth of a beaker using a vernier calliper and hence find its volume.- Introduction
	8	<ul style="list-style-type: none"> ● Scalar and Vector Product (statement and formula only) ● ASSIGNMENT 	8	<ul style="list-style-type: none"> ● Take the readings
5	9	<ul style="list-style-type: none"> ● Force and its units ● Concept of Resolution of force ● Newton's Law of motion (Statement and examples), 	9	<ul style="list-style-type: none"> ● Do calculation to find its volume ● & revise the experiment

	10	<ul style="list-style-type: none"> • Linear Momentum • Law of Conservation of Linear momentum (Statement only) • Impulse 	10	<ul style="list-style-type: none"> • Experiment - 4 • <u>To find the diameter of wire using screw gauge</u> - Introduction
6	11	<ul style="list-style-type: none"> • First Sessional Test 	11	<ul style="list-style-type: none"> • Perform experiment & take the readings • Revise the experiment
	12	<ul style="list-style-type: none"> • Circular motion • Definition of angular displacement, angular velocity, angular acceleration, frequency, time period 	12	<ul style="list-style-type: none"> • Experiment - 5 • <u>To find thickness of paper using screw gauge</u>.-Introduction
7	13	<ul style="list-style-type: none"> • Relation between linear and angular velocity • Centripetal forces (definition and formula only) • Centrifugal forces (definition and formula only) 	13	<ul style="list-style-type: none"> • Perform experiment & take the readings
	14	<ul style="list-style-type: none"> • Application of centripetal force in Banking of roads (derivation for angle of banking) 	14	<ul style="list-style-type: none"> • Revise the experiment
8	15	<ul style="list-style-type: none"> • Rotational Motion : Definition with examples • Definition of Torque 	15	<ul style="list-style-type: none"> • Experiment - 6 • <u>To determine the thickness of glass strip using a spherometer</u>-Introduction
	16	<ul style="list-style-type: none"> • Definition of angular momentum • Moment of inertia & its physical significance • Unit – III (Work, Power and Energy) • Introduction 	16	<ul style="list-style-type: none"> • Perform experiment & take the readings
9	17	<ul style="list-style-type: none"> • Work (Definition, Symbol, Formula and SI units) • Types of work with example • ASSIGNMENT 	17	<ul style="list-style-type: none"> • Revise the experiment
	18	<ul style="list-style-type: none"> • Friction – definition & its simple daily life applications • Energy – Definition & its SI unit • Examples of transformation of energy • Class Test 	18	<ul style="list-style-type: none"> • Experiment - 7 • <u>To determine radius of curvature of a given spherical surface by a spherometer</u>.-Introduction
10	19	<ul style="list-style-type: none"> • Kinetic Energy (Definition,formula,examples and its derivation) • Potential Energy (Definition,formula,examples and its derivation) 	19	<ul style="list-style-type: none"> • Perform experiment & take the readings
	20	<ul style="list-style-type: none"> • Law of conservation of mechanical energy for freely falling bodies (With Derivation) • Simple Numerical problems based on formula of Power and Energy 	20	<ul style="list-style-type: none"> • Revise the experiment

11	21	<ul style="list-style-type: none"> ● Second Sessional Test 	21	<ul style="list-style-type: none"> ● Experiment - 8 ● <u>To verify parallelogram law of forces</u>- Introduction
	22	<ul style="list-style-type: none"> ● Unit – IV (Properties of Matter) ● Introduction ● Elasticity and plasticity - Definition ● Deforming force, Restoring force, 	22	<ul style="list-style-type: none"> ● Perform experiment & take the readings
12	23	<ul style="list-style-type: none"> ● Example of Elastic and plastic body ● Definition of Stress and strain ● Hooke's law ● Modulus of Elasticity 	23	<ul style="list-style-type: none"> ● Revise the experiment
	24	<ul style="list-style-type: none"> ● ASSIGNMENT ● Pressure – definition ● Atmospheric pressure ● Gauge pressure ● Absolute pressure 	24	<ul style="list-style-type: none"> ● Experiment - 9 ● <u>To determine the atmospheric pressure at a place using Fortin's Barometer</u>- Introduction
13	25	<ul style="list-style-type: none"> ● Pascal's law ● Surface tension: definition, its units ● Applications of surface tension ● Effect of temperature on Surface tension 	25	<ul style="list-style-type: none"> ● (Setting up the apparatus) ● Perform experiment & take the readings
	26	<ul style="list-style-type: none"> ● Viscosity: definition, units, effect of temperature on viscosity ● Unit – V (Heat and temperature) ● Introduction 	26	<ul style="list-style-type: none"> ● Revise the Experiment
14	27	<ul style="list-style-type: none"> ● Definition of heat and temperature ● Difference between heat and Temperature ● Class Test 	27	<ul style="list-style-type: none"> ● Experiment - 10 ● <u>To determine force constant of spring using Hooke's law</u>- Introduction

	28	<ul style="list-style-type: none"> ● Principle and working of mercury thermometer ● Modes of transfer of heat (Conduction, convection and radiation with examples). 		<ul style="list-style-type: none"> ● (Setting up the apparatus) ● Perform experiment & take the readings
15	29	<ul style="list-style-type: none"> ● Properties of heat radiation ● Different scales of temperature and their relationship 	29	<ul style="list-style-type: none"> ● Revise the experiment
	30	<ul style="list-style-type: none"> ● Third Sessional Test 	30	<ul style="list-style-type: none"> ● Experiment - 11 ● Measuring room temperature with the help of thermometer and its conversion in different scale- Introduction
16	31	Revision	31	<ul style="list-style-type: none"> ● Perform experiment & take the readings
	32	Practice of previous year Papers	32	<ul style="list-style-type: none"> ● Revise the experiment