LESSON PLAN
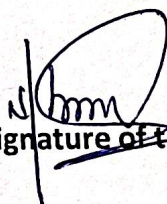No. of classes available per week-4
Total period available-60
Class duration- 1 Hour
1st SEMESTER (W) (2024-2025)

DEPARTMENT OF MATH & SCIENCE

Discipline: Math & Science	Semester: 1st	Name of the Teaching faculty: NIRUPAMA PANDA, Sr.Lect. in Math & Sc. (Phy)
Subject: Applied Physics-I(Th-2)	No of Days/Week class allotted: 4	Semester from Date: 16/08/2024 No of weeks: 15

Week	Class Day	Topics
1st	1st	Types of Physical Physical quantities; Fundamental and derived Quantities
		System of units (FPS, CGS and SI units)
	2nd	Writing the formulae for fundamental and derived quantities
	3rd	Dimensions and dimensional formulae of physical quantities, Application to dimensional analysis ; (i) Principle of homogeneity
	4th	(ii)Checking the correctness of equation using dimensional analysis
2nd	1st	(iii)Conversion from one system to another
		Measurments, Least count , Types of measurement(Direct, Indirect), Errors in measurement
	2nd	Scalar and Vector Quantities ,Types of Vectors
	3rd	Resolution of Vectors and Addition of Vectors
	4th	Scalar product with Numericals
		Vector product with Numericals
3rd	1st	Force and Momentum ,Derivation of Conservation of linear momentum
	2nd	Application ;Recoil of the gun and rocket
	3rd	Impulse and its Applications, Acceleration and Angular aceleration
	4th	Circular motion
		Centripetal and centrifugal force
4th	1st	Banking of road and Bending of the Cyclist
	2nd	Work : Concepts and Units, Types of Work

		3rd	Friction,Concepts and Types, Laws of limiting Friction
		4th	Workdone in moving an object on horizontal and inclined plane
5th		1st	Energy and its Units,Kinetic energy
			Gravitational potential energy with examples and derivations
		2nd	Mechanical energy, Conservation of mechanical energy for freely falling bodies
			Transformation of energy with examples
			Power and its units, Power –work relationship
		3rd	Internal Examination
			Translational and rotational motion
		4th	Definition of Torque and angular momentum
6th		1st	Conseration of angular momentum with applications
			Moment of Inertia and its Physical Significance
		2nd	Radius of gyration for rigid body and numericals
		3rd	Parallel and perpendicular axes theorem
		4th	Moment of Inertia of the Rod,disc
7th		1st	Moment of Inertia of the ring , sphere (hollow and solid)
		2nd	Doubt clear session on Rotational motion
		3rd	Elasticity
		4th	definition of stress and strain
8th		1st	Moduli of the elasticity
		2nd	Hooke's law
		3rd	Significance of stress-stress curve
		4th	Pressure,definitions and units
9th		1st	Pressure related numericals
		2nd	Types of pressure
		3rd	Fortin's Barometer and its applications
		4th	Surface tension , concept and units, cohesive and adhesive forces
10th		1st	Application of Surface tension, Effect of temperature and impurity o surface tension
		2nd	Viscocity and co-efficient of viscocity : Terminal velocity
		3rd	Stoke's law and effect of temperature on viscocity
		4th	Applications in Hydraulic Systems
11th		1st	Hydrodynamics : Fluid motion
		2nd	Streamline and turbulent flow, Reynold's Number
		3rd	Equation of Continuity
		4th	Bernoulli's Theorem and its applications
		1st	Doubt solving session on Properties of matter
		2nd	Concept of Heat and temperature

12th	3rd	Different modes of heat transfer with examples
	4th	Specific Heat and their types
	4th	Scales of temperature and their relationship
13th	1st	Types of Thermometer; Mercury thermometer, Bimetallic thermometer
	2nd	Platinum resistance thermometer, pyrometer and their uses
	3rd	Expanison of solid,liquids and gases
	4th	Co-efficient of linear expansion and numericals
14th	1st	Co-efficient of surface expansion and numericals
		Co-efficient of cubical expansion and numericals
	2nd	Relation between different types of co-efficient of expansions
	4th	Internal Examination-2
15th	1st	Co-efficient of thermal conductivity and applications
	2nd	Simple numerical
	3rd	Short type question discussion
	4th	Previous year question discussion

Signature of the faculty