PHYSICS LESSON PLAN WINTER 2024-25				
DISCIPLINE: **PHYSICS**		**SEMESTER : 1st**	**NAME OF THE TEACHING FACULTY: MISS SUSHREE SANGITA BEHERA (GF) & MISS SUJATA DAS (GF)**	
Subject: ENGINEEERING PHYSICS		**No. of Days/per week class allotted: 04classes**	**Semester From date:02-09-2024 to Date:10.12.2024**	
Total period alloted: 60			**No. of Weeks: 14**	
Sl. No	**Week**	**Class Day**	**Theory/Practical Topics**	**No of periods allotted**
1	**1st week/ of September 2024**	1ST	Physical quantities; fundamental and derived, Units and systems of units (FPS, CGS and SI units)	1
		2ND	dimension and Dimensional formulae of physical quantities.	1
		3RD	Principle of homogeneity of dimensions, Dimensional equations and their applications (conversion from one system of units to other)	1
		4TH	checking of dimensional equations and derivation of simple equations	1
2	**2nd week/ of September 2024**	1ST	Numericals & Limitations of dimensional analysis.	1
		2ND	Measurements: Need, measuring instruments, least count,	1
		3RD	types of measurement (direct, indirect), Errors in measurements (systematic and random),	1
		4TH	absolute error, relative error, error propagation,	1
3	**3rd week/ of September 2024**	1ST	error estimation and significant figures.	1
		2ND	Scalar and Vector quantities – examples, representation of vector, types of vectors.	1
		3RD	Addition and Subtraction of Vectors, Triangle and Parallelogram law (Statement only),	1
		4TH	Scalar and Vector Product, Resolution of a Vector	1
4	**4th week/ of September 2024**	1ST	application to inclined plane and lawn roller.	1
		2ND	Force, Momentum, Statement and derivation of conservation of linear momentum,	1
		3RD	its applications such as recoil of gun, rockets, Impulse and its applications.	1
		4TH	Circular motion, definition of angular displacement, angular velocity	1
		1ST	Definition of angular acceleration, frequency, time period	1

5	**1st Week/ october 2024**	2ND	Relation between linear and angular velocity, linear acceleration and angular acceleration (Numerical)	1
		3RD	Centripetal and Centrifugal forces with live examples	1
		4TH	Expression and applications such as banking of roads and bending of cyclist	1
6	**2nd Week/ october 2024**		HOLIDAY	
7	**3rd Week/ october 2024**	1ST	Work: Concept and units, examples of zero work, positive work and negative work	1
		2ND	Friction: concept, types, laws of limiting friction,	1
		3RD	coefficient of friction, reducing friction and its engineering applications,	1
		4TH	Workdone in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications.	1
8	**4th Week/ october 2024**	1ST	Energy and its units, kinetic energy, gravitational potential energy with examples and derivations,	1
		2ND	mechanical energy, conservation of mechanical energy for freely falling bodies, trans- formation of energy (examples).	1
		3RD	Power and its units, power and work relationship, calculation of power (numerical problems).	1
		4TH	Translational and rotational motions with examples,	1
9	**1st Week/ November 2024**	1ST	Definition of torque and angular momentum and their examples	1
		2ND	Conservation of angular momentum (quantitative) and its applications.	1
		3RD	Moment of inertia and its physical significance, radius of gyration for rigid body,	1
		4TH	Theorems of parallel and perpendicular axes (statements only),	1
10	**2nd Week/ November 2024**	1ST	Moment of inertia of rod, disc, ring and sphere (hollow and solid); (Formulae only).	1
		2ND	Properties of Matter Elasticity: definition of stress and strain, moduli of elasticity, Hooke's law,significanceof stress-strain curve.	1
		3RD	Pressure: definition, units, atmospheric pressure, gauge pressure, absolute pressure,	1

		4TH	Fortin's Barometer and its applications	1
11	**3rd week/ November 2024**	1ST	Surface tension: concept, units, cohesive and adhesive forces, angle of contact, Ascent Formula	1
		2ND	Applications of surface tension, effect of temperature and impurity on surface tension	1
		3RD	. Viscosity and coefficient of viscosity: Terminal velocity,	1
		4TH	Stoke's law and effect of temperature on viscosity, application in hydraulic systems.	1
12	**4th week/ November 2024**	1ST	Hydrodynamics: Fluid motion, stream line and turbulentflow,	1
		2ND	Reynold's number Equation of continuity, Bernoulli's Theorem (only formula and numericals) and its applications.	1
		3RD	Concept of heat & temperature, modes of heat transfer(conduction, convection & radiation)	1
		4TH	specific heat,scale of temperature & their relationship, types of thermometer(mercury thermometer,	1
13	**1st week/ December 2024**	1ST	Bimetallic thermometer,platinum resistance thermometer, pyrometer) & their uses	1
		2ND	Expansion of solid,liquid & gases, co-efficient of linear , surface &cubical expansion & relation among them	1
		3RD	coefficient of thermal conductivity & engineering application	1
		4TH	REVISION	1
14	**2nd Week/ December 2023**	1ST	REVISION	1
		2ND	REVISION	1
		3RD	REVISION	1
		4TH	REVISION	1