CLASS 11	2026 - 27	PHYSICS ANNUAL SYLLABUS
Month / NO. of Days	No. Of Periods	Name of the Chapter /Topic
April 12 MAY 2	10	**1. UNITS AND MEASUREMENTS** • Need for measurement: • Units of measurement; • systems of units; SI units, • fundamental and derived units. • significant figures. • Dimensions of physical quantities, • dimensional analysis and its applications.
June 6	10	**2: Motion in a Straight Line** • Frame of reference, Motion in a straight line, • Elementary concepts of differentiation and integration for describing motion, • uniform and nonuniform motion, and instantaneous velocity, • uniformly accelerated motion, • velocity - time and position-time graphs. • Relations for uniformly accelerated motion (graphical & Calculus treatment).
	12	**3: Motion in a Plane**
June 19		• Scalar and vector quantities; position and displacement vectors, general • vectors and their notations; • equality of vectors, multiplication of vectors by a real number; addition and • subtraction of vectors, Unit vector; • resolution of a vector in a plane, • rectangular components, Scalar and Vector product of vectors. • Motion in a plane, cases of uniform velocity and uniform acceleration • projectile motion, uniform circular motion. • projectile motion, uniform circular motion.
	10	**4: Laws of Motion**
		• Intuitive concept of force, Inertia, • Newton's first law of motion; • Momentum and Newton's second law of motion; impulse; • Newton's third law of motion. • Law of conservation of linear momentum and its applications. • Equilibrium of concurrent forces, • Static and kinetic friction, laws of friction, Rolling friction, lubrication. • Dynamics of uniform circular motion: • Centripetal force, examples of circular motion (vehicle on a level circular

		road, vehicle on a banked road).
	10	**5: Work, Energy and Power**
JULY **26**		• Work done by a constant force and a variable force; kinetic energy • work energy theorem, Notion of potential energy, potential energy of a spring, • conservative forces: non-conservative forces, • Motion in a vertical circle; power. • elastic and inelastic collisions in one and two dimensions.
		6: System of Particles and Rotational Motion
July	13	• Centre of mass of a two-particle system, momentum , conservation and
	Unit test I	• Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod. • Moment of a force, torque, angular momentum, • law of conservation of angular momentum and its applications. • Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, • comparison of linear and rotational motions. • Moment of inertia, radius of gyration, • values of moments of inertia for simple • geometrical objects (no derivation).
		7: Gravitation
		• Kepler's laws of planetary motion,
August	8	• universal law of gravitation.
23		• Acceleration due to gravity and its variation with altitude and depth.
		• Gravitational potential energy and • gravitational potential, escape speed, • orbital velocity of a satellite.
	8	**8: Mechanical Properties of Solids**
		• Elasticity, Stress-strain relationship, • Hooke's law, Young's modulus, • Bulk modulus, shear modulus of rigidity , • Poisson's ratio; • elastic potential energy.
		9: Mechanical Properties of Fluids
AUGUST	6	• Pressure due to a fluid column;
September 14		• Pascal's law and its applications (hydraulic • lift and hydraulic brakes),
23		• effect of gravity on fluid pressure. • streamline and turbulent flow, critical velocity, • Bernoulli's theorem and its simple applications. • Viscosity, Stokes' law, terminal velocity, • Surface energy and surface tension, • angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops,

		• bubbles and capillary rise.
		REVISION AND TERM 1 EXAM
		10: Thermal Properties of Matter
October **23**	11	• Heat, temperature, thermal expansion; • thermal expansion of solids, liquids and gases, • anomalous expansion of water; • specific heat capacity; C_p and C_v
		• calorimetry; change of state - latent heat capacity. • Heat transfer-conduction, convection and radiation, • thermal conductivity, qualitative ideas of • Blackbody radiation, Wein's displacement Law, • Stefan's Boltzmann's law .
	11	**11: Thermodynamics** • Thermal equilibrium and definition of temperature, • zeroth law of thermodynamics,
		• heat, work and internal energy. • First law of thermodynamics, • Second law of thermodynamics: • gaseous state of matter, change of condition of gaseous state – isothermal, adiabatic, reversible, irreversible, and cyclic processes.
November 11	10	**12: Kinetic Theory**
		• Equation of state of a perfect gas, • work done in compressing a gas. • Kinetic theory of gases - assumptions, concept of pressure. • Kinetic interpretation of temperature; rms speed of gas molecules • degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases • concept of mean free path, Avogadro's number.
December		**13: Oscillations**
23	12 Unit Test - II	• Periodic motion - time period, frequency, • displacement as a function of time, • periodic functions and their applications. • Simple harmonic motion (S.H.M) and its equations of motion; phase; • oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. • Kinetic and potential energies; simple pendulum derivation of expression for its time period.
January	11	**14: Waves**
		• Wave motion: Transverse and longitudinal waves,
JANUARY	6	• speed of travelling wave, • displacement relation for a progressive wave, • principle of superposition of waves,

22		• reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, • Beats.
FEBRUARY		**REVISION**
23		