CLASS 11	2025	PHYSICS ANNUAL SYLLABUS
Month /		
Number of Days	No.Of Periods	Name of the Chapter /Topic
April		
22	8	**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.
		2: Motion in a Straight Line
	10	· 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 treatment).
APRIL	4	**3: Motion in a Plane**
MAY	3	

3		· 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
June	8	· subtraction of vectors, Unit vector;
18		· 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.
June	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).
		5: Work, Energy and Power
		· Work done by a constant force and
July	10	a variable force; kinetic energy,
26		· 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
		· 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,
	Unit test I	· 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.
22		· Acceleration due to gravity and its
		variation with altitude and depth.
		· Gravitational potential energy and
		· gravitational potential, escape speed,
		· orbital velocity of a satellite.
AUGUST	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;
		· Pascal's law and its applications (hydraulic
September	14	· 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	11	· Heat, temperature, thermal expansion;
11		· thermal expansion of solids, liquids and gases,
		· anomalous expansion of water;
		· specific heat capacity; Cp and Cv
		· 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 .
November		**11: Thermodynamics**
21	11	· 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	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	· Periodic motion - time period, frequency,
		· displacement as a function of time,
		· periodic functions and their applications.
	Unit Test - II	· 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.
December	11	**14: Waves**
		· Wave motion: Transverse and longitudinal waves,
		· speed of travelling wave,
		· displacement relation for a progressive wave,
JANUARY	6	· principle of superposition of waves,
25		· reflection of waves, standing waves in strings and

		organ pipes, fundamental mode and harmonics,
		· Beats.
FEBRUARY		**REVISION**
22		