	ACADEMIC PLANNER FOR CLASS XI Physics.(2023-2024)				
DATE/DAY	**CHAPTER/CONTENTS**	**Teaching pedagogy**	**Mode of assesment**	**CW/HW**	**EXPERIMENTS/LAB ACTIVITY**
April	**CHAPTER 2 (UNIT AND MEASUREMENT)**				
(16-30)	Need for measurement: Units of				To measure the diameter of a small speherical/cylindrical body by using a pair of vernier calliper
(11 days)	measurement,system of units,SI units				
	Fundamental and derived units				
	Dimensions of physical quantities	Learning from daily life example.	N.P.based on fundamental and derived unit.		To measure the dimensions of a regular body of mass using vernier calliper and hence find its density
	Dimensional formulae and dimensinal equation				
	Dimensional analysis and its application				
	Significant figures		Test of dimensions will be taken	CW:Questions related to dimensional analysis	To determine the internal diameter and depth of beaker/calorimeter by using a pair of vernier
				HW: Practice of questions of dimensions	
			Revision		
May	**CHAPTER 3(MOTION IN STRAIGHT LINE)**				
(1-15)					
(11 days)	Frame of reference		Test of topics of motion in a straight line	CW:Ncert numericals ofmotion in a straight line	To measure the diameter of a given wire by using a screw gauge
	Elementary concepts of differentiation and integration for describing motion	Interdisciplinary approach			
	uniform and non- uniform motion, and instantaneous velocity	Learning from daily life example.	MCQ of graphs related questions	HW:Questions of chapter will be given	

	uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).				
JULY	**CHAPTER 4(MOTION IN PLANE)**				
(1--15)	Scalar and vector quantities				
(12days)	position and displacement vectors				
	general vectors and notation, equality				
	of vectors	lecture cum demonstration			
	Multiplication of vector by a real number		Test of vectors(Numericals based)	CW: Numericls of NCERT and extra questions	To measure thickness of a given sheet by using screw gauge.
	Addition and subtraction of vectors - graphical method				
	Unit vector,; Resolution of a vector in a plane			HW: Assignment of vectors	
	Rectangular components.				
	Scalar and Vector product of vectors.				
	Projectile motion				
	Uniform circular motion		**REVISION**	CW:Questions of projectile motion	
			N.P.based on instantaneous velocity;		
			Test of motion in a plane(Based on conceptual questions and numericals)	HW:Assignment of chapter	
JULY					To find the weight of a given of a given body,say a wooden block,using the parallelogram law of vector additions
(16-31)	**CHAPTER5(LAWS OF MOTION)**				
(12days)	Concept of force. Inertia	lecture cum demonstration			.
	First law of motion; momentum				

	Newton's second law of motion;			CW:Ncert questions and extra questions of laws of	
	Impulse; Newton's third law of motion.	lecture cum demonstration			
	Law of conservation of linear momentum and its applications.	learning by doing			
	Equilibrium of concurrent forces.				
	laws of friction,				To make a paper scale of given least count .(o.2cm,)
	Static and kinetic friction,Rolling friction				
	Dynamics of uniform circular motion:	lecture cum demonstration		HW:Assignment of laws of motion	
	Centripetal force,		Test of laws of motion		To study relation between force of limiting friction and normal reaction.
	Examples of circular motion (vehicle on level circular road, vehicle on banked road).	Animated video.	N.P.based on impulse,friction	**Unit test I-chapter 2.3.4**	To study dissipation energy of a simple pendulum by plotting a graph between square of amplitude and time
AUGUST	**Chapter 6**				
1--15	**(work ,energy and power)**				
(09 days)	introduction	lecture cum demonstration		CW:Questions related to chapter	
	The work energy theorem				
	Work and kinetic energy		Test of work,energy and power.	HW: Assignment of chapter	Using a simple pendulum plot L-T graph . Hence find effective length of a second's pendulum using appropriate graph
	Work done by variable force				
	The work energy theorem by				
	variable force				
	The concept of potential energy	lecture cum demonstration			
	The conservation of mechanical				
	energy				

	The potential energy of aspring				
	conservative forces: non-conservative forces,	lecture cum demonstration			
	motion in a vertical circle;	Animated video			
	elastic and inelastic collisions in one and two dimensions.		**REVISION**		
			Numerical problems based on work energy theorm		
AUGUST	**Chapter–7: System of Particles and Rotational Motion**				
16--31					
(13 days)	Centre of mass of a two-particle	Peer group learning			
	momentum conservation and Centre of mass motion		Test of rotational motion(Derivation and numericals based)		
	Centre of mass of a rigid body; centre of mass of a uniform rod	Peer group learning		product	
	torque, angular momentum				
	conservation of angular momentum				
	Equilibrium of rigid bodies				
	rigid body rotation and ,			Assignment of chapter will be given	
	equations of rotational motion	co-relation with linear motion.			
	comparison of linear and rotational motions				
	Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation)	Animated video			
Sept.	**Revision**				
1--15					
(11days)					

Sept.			Term I examination	**Term I exams**	
(15-31)					
(13					
Oct.					
(1-15)	**CHAPTER 8(GRAVITATION)**			Assignment of chapter will be given	
(10 days)	Introduction	Discussion method.			To find the spring constant of ahelical spring from the load extention graph
	Kepler's law				
	universal law of gravitation.	Discussion method.			
	Acceleration due to gravity of the earth	Activity based learning			
	Acceleration due to gravity below and above the surface of earth.				
	Gravitation potential energy		Test of Gravitation		
	gravitational potential,		(Conceptual based)		
	escape velocity.				
	orbital velocity of a satellite.				
			REVISION	CW:Conceptual questions and numericls related to chapter	
			N.P.based on theorm of parallel and perpendicular axis		
			N.P.based on energy of satellite		
	CHAPTER9(MECHANICAL PROPERTIES OF SOLIDS)		Test of solids and fluids		

	Elasticity	Activity based learning			
	Stress-strain relationship	story telling.		HW:Assignment of chapter	To determine YOUNG'S modulus of the material of a given wire using searle's appartus.
	Hooke'slaw				
	Young's modulus, bulk modulus,				
	shear modulus of rigidity (qualitative idea only)				
	Poisson's ratio				
	elastic energy.		Test of solids and fluids		
Oct.	**Chapter 10(mechanical properties of fluid)**				
(15-31)	Pressure due to a fluid column				
(09 days)	Pascal's law and its applications	lecture cum demonstration			
	(hydraulic lift and hydraulic brakes).				
	effect of gravity on fluid pressure				
	Viscosity, Stokes' law, terminal velocity				To observe and explain the effect of heat on a bimettalic strip
	streamline and turbulent flow				
	Bernoulli's principle and its simple applications.				
	critical velocity,			CW,Ncert questions of chapter	
	Surface energy and surface tension	practical life example			To determine the coefficient of viscosity of a given liquid by measuring terminal velocity.
	angle of contact			HW:Assignment of chapter	
	excess of pressure across a curved surface,				
	application of surface tension ideas to drops, bubbles and capillary rise				
	Capillary rise.				
Nov.					
(1-15)	**Chapter11(Thermal properties of matter)**				

(09 days)	Introduction				
	Temperature and heat	lecture cum demonstration			To study the relation b/w temperature of a body and time by plotting a cooling curve
	thermal expansion of solids, liquids and gases,				
	anomalous expansion of water				
	Thermal expansion				
	Specific heat capacity				
	calorimeter				
	change of state - latent heat capacity				
	Heat transfer-conduction, convection a	practical life example	**REVISION**		
	thermal conductivity,, Wein's displacement Law, Stefan's law .		N.P.based on calorimeter,pascal's law,specific heat capacity.		
	qualitative ideas of Blackbody radiation				
Nov.					
(16-30)	**Chapter 12(Thermodynamics)**	interdisciplinary approach			
(12 days)	Introduction	lecture cum demonstration	Test of thermodynamics	CW:Numericals of laws of	
	Thermal equilibrium &definition of temperature		MCQ	thermodynamics	
	Zeroth law of thermodynamics			HW:Assignment of chapter	
	Heat ,internal energy and work				
	First law of thermodynamics	practical life example			
	Second law of thermodynamics				
	gaseous state of matter,				
	change of condition of gaseous state - isothermal, adiabatic, reversible, irreversible, and cyclic processes.			**Unit test II-chapter 8,9,10&11**	

					To note the change in the level of liquid in a container heating and interpret the observation
	Chapter 13(Kinetic theory)				
	Introduction				
	Equation of state of a perfect gas,				
	work done in compressing a gas.		Test of kinetic theory of gases		
	Kinetic theory of gases - assumptions	Interdisciplinary approach	**REVISION**		
	concept of pressure.	discussion method	N.P. based on efficiency,coefficient of performance.		
	Kinetic interpretation of temperature;		N.P. based on Specific heat and latent heat		
	rms speed of gas molecules;	peer group learning			
	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.	.			
	Chapter–14: Oscillations	;			
Dec.	Introduction	lecture cum demonstration			
(1-15)	Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their application				
(09 days)	Simple harmonic motion (S.H.M) and its equations of motion; phase	lecture cum demonstration		HW:Numericals of oscillation	To determine speed of sound using resonance tube method.

	oscillations of a loaded spring-restoring force and force constant;			CW:Questions of NCERT and extra questions related to oscillation	Tostudy the relationship b/w frequency and length of a given under constant tension using sonometer
	energy in S.H.M. Kinetic and potential energies;	lecture cum demonstration			
	simple pendulum derivation of expression for its time period				
					To study the variation in volume with pressure for a sample of an air at constant temp. by plotting graphs between P and V .
Dec.	**CHAPTER15(WAVE)**		Test of oscillation and waves	CW:Questions of waves	
15-31	Wave	lecture cum demonstration		HW:Assignment of oscillation and waves	
(13days)	Transverse and longitudinal waves				
	Displacement relation in progressive waves				
	Speed of a travelling wave				
	The principle of superpostion				
	Reflection of wave				
	standing waves in strings and organ pipes				
	fundamental mode and harmonics,				
	Beats				
Jan	**Revision**		**Annual examination - Complete syllabus.**		
(16-31)					
(13days)