

<b>ACADEMIC PLANNER &amp; UNITIZATION OF SYLLABUS</b> <b>ACADEMIC YEAR 2024-25.</b> <b>DEPARTMENT : Physics NEP CLASS : I Sem</b> <b>Paper I-Phy-DSCT1:</b>			
Week,Month	CLASS	Portions Planned for 1 hour	Teacher
Aug 1 <sup>st</sup> week	1	Units and measurements: System of units (CGS and SI), measurement of length, mass and time,	CRS
	2	Laws of motion: Newton's Laws of motion.	CRS
	3	Elasticity: Hooke's law, Stress-strain diagram	KSS
	4	Surface tension: Definition of surface, molecular theory	SUV
Aug 2 <sup>nd</sup> week	1	dimensions of physical quantities, dimensional formulae,	CRS
	2	Dynamics of single particle and system of particles,	SUV
	3	elastic moduli	KSS
	4	angle of contact	SUV
Aug 3 <sup>rd</sup> week	1	errors, Mean deviation	KSS
	2	Centre of mass	SUV
	3	Poisson's ratio, relation between elastic constants, expression for Poisson's ratio in terms of elastic constant	SUV
	4	surface energy, relation between surface tension and surface energy,	KSS
Aug 4 <sup>th</sup> week	1	Problems	KSS
	2	problems	CRS
	3	problems	PA
	4	problems	SUV
Aug 5 <sup>th</sup> week	1	Momentum and Energy: Work and energy,	CRS
	2	Dynamics of Rigid bodies: Rotational motion about an axis	SUV
	3	Work done in stretching	SUV
	4	pressure difference across a curved surface (with example)	KSS
Oct 1 <sup>st</sup> week	1	Conservation of linear momentum,	KSS
	2	Relation between torque and angular momentum,	CRS
	3	work done in twisting a wire, twisting couple on a cylinder	SUV
	4	excess pressure inside a spherical liquid drop	KSS
Oct 2 <sup>nd</sup> week	1	Conservation of energy with examples,	KSS
	2	Rotational energy, Moment of inertia	SUV
	3	Beams (Neutral layer, neutral axis), bending of beams, expression for bending moment	KSS
	4	problems	KSS
Oct 3 <sup>rd</sup> week	1	Motion of rockets	CRS
	2	Laws of MI,	SUV
	3	theory of single cantilever	SUV
	4	Assignment discussion	KSS
Oct 4 <sup>th</sup> week	1	problems	CRS

	2	MI of a rectangular lamina and solid cylinder,	SUV
	3	problems	CRS
	4	Viscosity-	SUV
Oct 5 <sup>th</sup> week and Nov 1 <sup>st</sup> week	1	Special Theory of Relativity: Review of Galilean relativity.	CRS
	2	Flywheel	SUV
	3	Torsional pendulum, expression for time-period of torsional oscillations	SUV
	4	Streamline flow, turbulent flow,	KSS
Nov 2 <sup>nd</sup> week	1	Internal test.	KSS
	2	Internal test	CRS
	3	problems	SUV
	4	equation of continuity,	KSS
Nov 3 <sup>rd</sup> week	1	Constancy of speed of light, Postulates of the Special Theory of Relativity. Length contraction and Time dilation.	CRS
	2	Gravitation: Law of Gravitation, Motion of a particle in a central force field Satellite in a circular orbit	CRS
	3	determination of rigidity modulus and moment of inertia	SUV
	4	determination of coefficient of viscosity by Poiseuille's method,	SUV
Nov 4 <sup>th</sup> week	1	Relativistic addition of velocities	KSS
	2	(motion in a plane, conservation of angular momentum, constancy of areal velocity is constant).	PA
	3	CRS	CRS
	4	Stoke's method	SUV
Nov 5 <sup>th</sup> week Dec 1 <sup>st</sup> week	1	Problems	KSS
	2	Problems	CRS
	3	determination of $q$ , $\eta$ and $\sigma$ by Searle's double bar with necessary theory	KSS
	4	Problems	KSS
Dec 2 <sup>nd</sup> week	1	Revision	CRS
	2	Revision	SUV
	3	Revision	CRS
	4	Revision	KSS



	4	Problems	KSS
June 2 <sup>nd</sup> week	1	<b>Electrostatic potential</b> Electric potential, line integral, gradient of a scalar function, relation between field and potential	KCR
	2	<b>DC currents:</b> Electric currents and current density.	PA
	3	AC Circuits RMS and Average value of AC	KCR
	4	Poynting vector, magnetic moment of a point charge moving in a circular loop	KSS
June 3 <sup>rd</sup> week	1	Potential due to point charge and distribution of charges (Examples: potential associated with a spherical charge distribution, infinite line charge distribution, infinite plane sheet of charges).	KCR
	2	Electrical conductivity and Ohm's law (Review). Network theorems (Thevenin's theorem	PA
	3	Response of RL circuit using j operator method	KCR
	4	electric current in atoms, electron spin and magnetic moment	KSS
June 4 <sup>th</sup> week	1	Test	KCR
	2	Test	PA
	3	Test	KCR
	4	Test	KSS
June 5 <sup>th</sup> and July 1 <sup>st</sup> week	1	Constant potential surfaces, Potential due to a dipole and electric quadrupole and problems.	KCR
	2	Superposition theorem and the maximum power transfer theorem),	PA
	3	Response of RC circuit using j operator	KCR
	4	<b>Magnetic materials:</b> magnetic intensity and magnetic induction, intensity of magnetisation, susceptibility, permeability,	KSS
July 2 <sup>nd</sup> week	1	Superposition- (2) different frequencies (Beats) – Analytical treatment. Beats	KCR
	2	maximum power transfer theorem), Problems	PA
	3	Response of RLC circuit using j operator	KCR
	4	Types of magnetic materials, diamagnetic paramagnetic and ferromagnetic materials.	KSS
July 3 <sup>rd</sup> week	1	Superposition of two perpendicular harmonic oscillations:	KCR
	2	Transient currents in RC, LR circuits	PA
	3	quality factor admittance and impedance power and energy in AC circuits	KCR
	4	Classical Langevin's theory of diamagnetism	KSS
July 4 <sup>th</sup> week	1	Lissajous Figures with equal frequency- Analytical treatment.. Uses of Lissajous' figures	KCR
	2	Transient currents in LCR circuits, Problems	PA
	3	Problems	KCR
	4	B-H hysteresis curve ,Hard and soft magnetic materials	KSS
July 5 <sup>th</sup> week and Aug 1 <sup>st</sup> week	1	Revision	KCR
	2	Revision	PA
	3	Revision	KCR

	4	Revision	KSS
Aug 1 <sup>st</sup> week 2 <sup>nd</sup> week	1	Question bank discussion	KCR
	2	Question bank discussion	PA
	3	Question bank discussion	KCR
	4	Question bank discussion	KSS