

Sr. No.	Date	Topics to be covered
1.	03/09/2021- 20/09/2021	Cartesian and spherical polar co-ordinate systems, area, volume, displacement, velocity and acceleration in these systems, Solid angle, Various forces in Nature (brief introduction),
2.	21/09/2021- 10/10/2021	Centre of mass, Equivalent one body problem, Central forces, Equation of motion under central force, Equation of orbit in inverse square, Force field and turning points, Kepler's laws and their derivations.
3.	11/10/2021- 30/10/2021	Relationship of conservation laws and symmetries of space and time. Inertial frame of reference. Galilean transformation and invariance, Non-inertial frames of reference, Coriolis force and its applications
4.	01/11/2021- 20/11/2021	Variation of acceleration due to gravity with latitude. Foucault pendulum (qualitative). Elastic collision in Laboratory and C.M system, velocities, angles and energies, Cross section of elastic scattering . Rutherford scattering (qualitative). MST WILL BE HELD
5.	21/11/2021- 10/12/2021	Work and potential difference. Potential difference as line integral of electric field. Electric potential due to a point charge, a group or point charges, dipole and quadruple moments, long uniformly charged wire, charged disc. Stoke's theorem and its application in Electrostatic field, curl $E=0$ . Electric field as gradient of scalar potential.
6.	11/12/2021- 24/12/2021	Calculation of E due to a point charge and dipole from potential. Potential due to arbitrary charge distribution and multipole moments. Poisson and Laplace's Equation and their solutions in Cartesian and concept of electrical images. Calculation of electric potential and field due to a point charge placed near an infinitely conducting sheet.
7.	15/03/2022- 30/03/2022	Rigid body motion: Rotational motion, principal moments and axes. Euler's equations; precession and elementary gyroscope. Galilean transformation and Invariance, Non-Inertial frames, concept of stationary universal frame of reference and ether. Michelson-Morley experiment and its result. MST WILL BE HELD
8.	1/04/2022- 15/04/2022	Postulates of special theory of relativity. Lorentz transformations, Observer and viewer in relativity. Relativity of simultaneity. Length, Time, Velocities, Relativistic Doppler effect. Variation of mass with velocity, mass-energy equivalence, rest mass in an inelastic collision, Relativistic momentum and energy, their transformation, concepts of Minkowski space, four vector formulation.
9.	16/04/2022- 30/04/2022	Lorentz's force. Definition of B. Biot Savart's Law and its applications to long straight wire, circular current loop and solenoid. Ampere's Circuital law and its application. Divergence and curl of B. Hall effect expression and co-efficient. Vector potential, Definition and derivation of current density-definition its use in calculation or change in magnetic field at a current sheet.

Teaching Plan (Session 2021-22)

Class- B.Sc. 1

Teacher Name - Sunita Saini

Subject-Physics

Period No. 1

Name of Paper -Mechanics, Electricity and Magnetism

		Transformation equation of $E$ and $B$ from one frame to another. Faraday's Law of EM induction. Displacement current. Maxwell's equations. Mutual inductance and reciprocity theorem. Self inductance $L$ for solenoid. Coupling of Electrical circuits. Analysis of LCR series and parallel resonant circuits. $Q$ -factor. Power consumed power factor.
--	--	--

Principal

Signature of teacher