Teaching Plan
(Session 2024-25)
Class- B.Sc. I (SEM – I) Teacher Name- Sunita Saini
Subject-Physics (MECHANICS)
CODE PHYBH1101T (MAJOR)

Sr.No.	Date(Weekly)	Topics to be covered
1.	1-3 Aug	**Section A** Cartesian and spherical polar co-ordinate systems
2.	5-10 Aug	Area, volume,displacement, velocity and acceleration in these systems. Solid angle, Various forces in Nature (brief introduction), **Class Test** **Topic** Difference between Cartesian and Spherical polar coordinates systems
3.	12-17 Aug	Centreof mass, Equivalent one body problem, Central forces, Equation ofmotion under central force. Equation of orbit in inverse square **Class Test** **Topic** **Reduction of two body problem into equivalent one body problem**
4.	19-24 Aug	Force field and turning points, Kepler laws and their derivations. Inertial frame of reference, Galilean transformation and invariance, Non-inertial frames ofreference. **Group discussion about covered topics** **Class Test** **Kepler laws and their derivations**
5.	26 Aug-31Aug	Centrifugal force and its effect on acceleration due to gravity, Coriolis force and its applications , Variation of acceleration due to gravity with latitude.
6.	2-7 Sep	**Class Te**st **Topic**: Galilean transformation and invariance **Section – B** Elastic collision in Laboratory and C.M. system. Velocities, angles and energies. Cross section of elastic scattering.
7.	9-14 Sep	Concept of stationary universal frame of reference and ether, Michelson-Morley experiment and its result,

8.	16 - 21 Sep	**Group discussio**n Lorentz transformation , observer and viewer in relativity, Relativity of simultaneity, length, time
9.	23 -28 Sep	**Assignment on topics** ✓ Postulates of special theory of relativity. **(BOYS).** ✓ Rutherford scattering (qualitative). **(GIRLS)** Group discussion about topics given in Assignment.
10.	30 Sep - 5Oct	Relativistic addition theorem of velocities, Relativistic Doppler effect, Variation of mass with velocity, mass energy equivalence
11.	7 – 12 Oct	rest mass in an inelastic collision, Relativistic momentum and energy, their transformation.
12.	14 - 19 Oct	Concepts of Minkowski space, four vector formulation.
13.	21 – 26 Oct	**MST**
14.	28 Oct – 2 Nov	**Revision**
15.	4 Nov – 9 Nov	**Revision**

Teaching Plan
(Session 2024-25)

Class- B.Sc. I (SEM – II) Teacher Name- Sunita Saini

Subject-Physics (ELECTRICITY AND MAGNETISM)

CODE PHYBH1201T (MAJOR)

Sr. No.	DATES (WEEKLY)	Topic which will be covered
1.	7-11 Jan	**Section A** Basic ideas of Vector Calculus, Gradient, Divergence, curl andtheir physical significance. Coulomb's Law for point charges. Conservation and quantization of charge.
2.	13-18 Jan	Electric field due to dipole line charge and sheet of charge. Electric flux. Gauss's Law and its applications. **Class Test** **Topic-**. Coulomb's Law for point charges.
3.	20-25 Jan	Gauss's divergence theorem and differential form of Gauss's Law.Green's theorem. **Class Test** **Topic-Green's** theorem.
4.	27 Jan - 1Feb	Stoke's theorem and its application in Electrostatic field, curl E=O.Electric field as gradient of scalar potential.
5.	3-8 Feb	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. **Class Test** **Topic-** Calculation of E due to a point charge and dipole from potential
6.	10-15 Feb	**Assignment on topics** Work and potential difference. Potential difference as line integral of electric field. Electric potential due to a point charge. **(BOYS)** Agroup or point charges, dipole and quadruple moments, long uniformly charged wire, charged disc**. (GIRLS)** **Group discussion about topics given in Assignment**
7.	17-22 Feb	**Section – B** Current and current density, equation of continuity. Microscopic form of Ohm's Law.(J=oE) and conductivity.

8.	**24 Feb -1 Mar**	Failure of Ohm;s Law. Invariance of charge. E in different frames of reference. Field of a point charge moving with constant velocity. **Class Test** **Topic**- Microscopic form of Ohm's Law.(J=oE) and conductivity.	
9.	**3-8 Mar**	Interaction between moving charges and force between parallel And bound currents,	
10.	**10-15 Mar**	Permeability and Susceptibility and their inter-relationship, Lorentz's force, Ampere's circuital law and its application,	
11.	**17-22 Mar**	Displacement current, Maxwell's equations, **Class Test** **Topic** Ampere's circuital law and its application,	
12.	**24-29 Mar**	Divergence and curl of B, Faraday's law of EM induction	
13.	**1 -5 April**	Self inductance L for solenoid, Coupling of Electrical circuits,	
14.	**7-12 April**	Analysis of LCR series and parallel resonant circuits, O-factor, Power Consumed power facror.	
15.	**16-30 April**	**M S T**	
16.	**1 May……..**	Revision	