## (Lesson Plan)

## MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans (Odd Semester) Session – (2025-2026)

Name of the Teachers: Dr. Kulwinder Kaur and Dr. Swati Khatta

**Department:** Department of Physics

Class: B.Sc. I Subject: Mechanics Section(s): N.M & Vocational

S.No. Date (Monthly)		thly)	Topics to be Covered	Academic Activity Undertaken*	
	From	To			
1.	24/07/2025	31/08/2025	Cartesian, plane polar and spherical polar co- ordinate systems, area, volume, displacement, velocity, and acceleration in these systems, Relationship of conservation laws of linear momentum, angular momentum and energy, symmetries of space and time.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems (v) Class test	
2.	01/09/2025	30/09/2025	Various forces in nature, relative strengths and spatial dependence, Motion under force obeying inverse square law, equivalent one-body problem. Motion under central forces, equation of motion under central force, equation of orbit and turning points, Kepler's Laws. Elastic collision in lab and C.M. systems, relationships of velocities, angles, and kinetic energies in these two systems.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems (v) Class test	
3.	01/10/2025	31/10/2025	Galilean transformations and Invariance, Non- Inertial frames. Fictitious forces in a rotating frame of reference, Centrifugal and Coriolis forces due to rotation of earth. Concept of stationery universal frame of reference and ether, Michelson-Morley experiment, and its results.		
4.	01/11/2025	13/11/2025	Postulates of special theory of relativity, Lorentz transformations, Kinematical consequences of Lorentz transformations – length contraction and time dilation, Twin paradox, Transformation of velocities, Relativistic Doppler effect. Variation of mass with velocity, mass-energy equivalence.	(iii) Notes	

## MCM DAV College for Women, Sector – 36A, Chandigarh Monthly Teaching Plans (Even Semester) Session – (2025-2026)

Name of the Teachers: Dr. Kulwinder Kaur and Dr. Swati Khatta

**Department:** Department of Physics

Class: B.Sc. I Subject: Electricity and Magnetism Section: N.M & Vocational

S.No.	Date		<b>Topics to be Covered</b>		Academic Activity	
		nthly)		Undertaken*		
	From	То				
1.	10/01/2026	28/2/2026	Basic ideas of Vector Calculus, Del Operator, Gradient, Divergence, curl in Cartesian coordinates, physical significance and applications, Conservative field, Laplacian in Rectangular coordinates. Stoke's theorem, Gauss's divergence theorem, Coulomb's Law for point charges and continuous distribution of charges, electric field due to dipole, line charge, charged ring, circular disc, spherical shell, solid sphere, Gauss's Law and its differential form, Applications of Gauss's Law.	(i) (ii) (iii) (iv) (v)	Lecture method Group discussion Notes Numerical Problems Class tests and doubt sessions	
2.	01/03/2026	31/03/2026	Work and potential difference, Potential difference as line integral of field, Electric potential due to uniformly charged wire, circular ring, spherical shell, dipole, linear quadrupole, Electric field as gradient of scalar potential, curl E = 0. Poisson and Laplace's equation. Polarisation of matter, atomic and molecular dipoles, induced dipole moment and atomic polarizability. Electric susceptibility and polarization vector. Relation K=1+c, Gauss's law for dielectrics. Displacement vector, Div. D = 0.	(ii) (iii) (iv)	Lecture method Group discussion Notes Numerical Problems Class Tests and doubt sessions	
3.	01/4/26	25/4/26	Current density and equation of continuity. Microscopic form of Ohm's Law ( <b>J</b> = σ <b>E</b> ). Invariance of charge, Ein different frames of reference. Behaviour of various substances in magnetic field. Definition of M and H, Permeability and susceptibility and their inter relationship. Lorentz's force. Definition of <b>B</b> . Biot Savart's Law and its application to long straight wire, circular current loop and solenoid. Ampere's Circuital law and its applications. Divergence and curl of <b>B</b> . Faraday's Law of EM induction, Self and Mutual inductance and reciprocity theorem.	(iv)	Lecture method Group discussion Notes Numerical Problems Class tests and doubt sessions	