(Lesson Plan)

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Odd Semester)
Session – (2022-2023)

Name of the Teacher: Dr. Swati Khatta

Department: Department of Physics
Class: B.Sc. I **Subject: Mechanics-I** **Section(s): N.M & Vocational**

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	22/8/2022	30/9/2022	Cartesian and spherical polar coordinate, Two and Three dimensional coordinate systems, Area, volume, displacement, velocity and acceleration of these systems and solid angle, Centre of mass, linear momentum and angular momentum. Torque, potential energy and kinetic energy of a system of particles.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
2.	01/10/2022	31/10/2022	Relationship of conservation laws of linear momentum, angular momentum and energy, and symmetries of space and time. Various forces in nature, relative strengths and spatial dependence, Motion under force obeying inverse square law, equivalent one body problem.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
3.	1/11/22	25/11/22	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, cross section of elastic scattering, Rutherford scattering.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems

MCM DAV College for Women, Sector – 36A, Chandigarh
Monthly Teaching Plans (Even Semester)
Session – (2022-2023)

Name of the Teacher: Dr. Swati Khatta

Department: Department of Physics
Class: B.Sc. I **Subject: Mechanics-II** **Section(s): N.M & Vocational**

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	16/1/2023	28/2/2023	Rigid Body motion; Rotational motion, principal moments and Axes, Euler's equations, precession and elementary gyroscope. Galilean transformations and Invariance, Transformation equations for inertial frames inclined to each other. Non-Inertial frames. Fictitious forces in a rotating frames of reference, Centrifugal and Coriolis forces due to rotation of earth, Foucault's pendulum.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
2.	01/3/2023	31/03/2023	Concept of stationery universal frame of reference and ether, Michelson-Morley experiment and its results, Postulates of special theory of relativity, Lorentz transformations. Kinematical consequences of Lorentz transformations – length contraction and time dilation, Twin paradox, Transformation of velocities, Simultaneity of relativity.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems
3.	01/4/2023	25/4/2023	Velocity of light in moving fluid, Relativistic Doppler effect. Variation of mass with velocity, mass-energy equivalence, rest mass in an inelastic collision, relativistic momentum & energy, their transformation, concepts of Minkowski space, four vector formulation.	(i) Lecture method (ii) Group discussion (iii) Notes (iv) Numerical Problems