Code	Subject Title	Cr. Hrs	Semester
PHY-101	Elementary Mechanics	3	I
Year	Discipline		
1	Physics		

Vector derivatives and operations, divergence theorem, Stokes' theorem, particle dynamics with emphasis on effect of frictional and drag forces on motion, non-inertial frames and pseudo forces, work-energy theorem, conservative and non-conservative forces, two particle and many-particle systems, centre of mass of solid objects, momentum changes in a system of variable mass.

Collisions in the center-of-mass reference frame, rotational dynamics with emphasis on Parallel-axis theorem, moment of inertia of bodies of various shapes, combined rotational and translational motion.

Angular momentum, angular velocity and stability of spinning objects, gravitational effect of a spherical mass distribution, Kepler's laws of planetary motion.

Books Recommended:

Physics Vol. I by Resnick, Halliday and Krane, 4th Edition, John Wiley and Sons Inc, New York, 1992.

Physics Vol. I by Resnick, Halliday and Krane, 5th Edition, John Wiley and Sons Inc, New York, 2002.

Fundamental of Physics by Halliday Resnick and Krane, 5th Edition, John Wiley and Sons Inc, New York, 1999.

University Physics 8th Edition by Sears, Zemansky and Young, Addison-Wesley, Reading (MA), USA, 2000.

Physics by Alonso and Finn: Addison-Wesley, Reading (MA), USA, 1999.