Semester-I		
Paper Code	**Theory**	**Credits:2**
103101	**Title: Mechanics-I**	**30 L**
Unit 1	**Rotational motion**	**15 L**
	Rotational Kinematics: Rotational motion and angular displacement, Angular velocity and angular acceleration, Equations of rotational kinematics, Angular variables and tangential variables, centripetal acceleration, Rolling motion, The vector nature of angular variables. Ref: PHY: 8.1 to 8.8. ***Rotational Dynamics:*** The effects of forces and torque on the motion, Rigid objects in equilibrium,Center of gravity, Newton's second law of rotational motion, Rotational work and energy, Angular momentum. Ref: PHY: 9.1 to 9.7	
Unit 2	**SHM, Solidsand Fluids**	**15 L**
	Simple Harmonic motion and Elasticity: The ideal spring and SHM, SHM and reference circle, Energy and SHM, The pendulum, Damped harmonic motion, Driven harmonic motion and resonance, Elastic deformation, Stress, strain and Hook's law. Ref: PHY: 10.1 to 10.9 ***Fluids:*** Mass density, Pressure, Pressure and depth in static fluid, Pressure gauges, Pascal's principle,Archimede's principle, Fluids in motion, The equation in continuity, Bernoulli's equation, Application, Viscous flow. Ref: PHY: 11.1 to 11.12	

References:

Physics byCutnell and Johnson--- Wiley India Edition (5th Edition). (PHY)

Additional References:

1. Fundamentals of physics by Alan Giambattista, betty McCarthy Richardson, Robert C Richardson- Tata McGraw Hill.
2. Physics: (Volumes I and II) H. C. Verma.
3. Physics: (Volumes I and II) by Resnick, Halliday and Krane- Wiley India Edition (5th Edition)