BE2104 Mechanics (3-0-0)

Module I (13 Hours)

Concurrent forces on a plane – Composition and resolution of forces and equilibrium of concurrent coplanar forces, Method of projections, Methods of moment, Friction.

Parallel forces in a plane- Two parallel forces, General case of parallel forces, Center of parallel forces in a plane and center of gravity- centroids of composite plane figure and curves, Distributed parallel forces in a plane. General case of forces in a plane- composition of forces in a plane and equilibrium of forces in a plane.

Module II (13 Hours)

Plane trusses- method of joints and method of sections, Principle of virtual work – equilibrium of ideal systems.
Moments of Inertia- Plane figure with respect to an axis in its plane and perpendicular to the plane- parallel axis theorem, Moment of Inertia of material bodies.
Rectilinear Translation- Kinematics- Principles of Dynamics- D'Alemberts Principles.

Module III (14 Hours)

Momentum and impulse, Work and Energy- impact

Curvilinear translation- Kinematics- equation of motion- projectile- D'Alemberts Principle in curvilinear motion, Moment of momentum, Work- Energy in curvilinear motion.
Kinetics of Rotation of rigid body

Text Books:

1. Engineering Mechanics by S Timoshenko, D.H Young and J.V.Rao, Revised 4th edition (Special Indian Edition), McGraw Hill.

Reference Books:

1. Fundamental of Engineering Mechanics(2nd Edition) by S. Rajesekharan & G.Sankara Subramanium, Vikash Publishing House Pvt. Ltd.
2. Engineering Mechanics by Shames and Rao, Pearson Education.
3. Engineering Mechanics, Statics and Dynamics by Boresi and Schmidt, Thomson.
4. Engineering Mechanics by I.S.Gunjal, Laxmi publications.
5. Engineering Mechanics by K.L.Kumar, Tata McGraw Hill
6. Engineering Mechanics by Kumaravelan, Scitech