

Statics & Dynamics

Course Code: BEB307

Contact Hours: 60

Credit: 04 (L-3, T-1, P-0)

MM: 100

Course Objectives:

- 1- Acknowledge to student about the Law of Forces.
- 2-To provide the concept of velocity and acceleration of a moving particle.
- 3-To make able to distinguish between Radial and Transverse velocity and acceleration.
- 4-To make them clear about Simple Harmonic Motion and Earth attraction.

Course Outline:

Analytic condition of equilibrium for coplanar forces. Equation of the resultant force. Common catenary, Centre of gravity, Virtual work. Wrenches, Null line and null plane.

Rotation of a vector in a plane. Radial and transverse velocity & acceleration, Tangential and Normal velocity and acceleration. Simple harmonic motion, Motion under other laws of forces, Earth attraction, Motion in resisting medium. Central orbits and Motion of a particle in three dimensions Kepler's laws of motion.

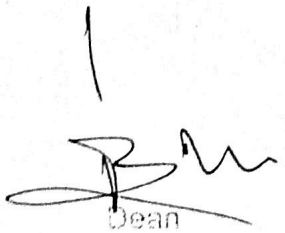
Course Outcomes:

After completing the course, students will be able to:


| |
|---|
| 1. Understand various concept of work, force and Gravity. |
| 2. Analyze the Radial and Transverse and Tangential and normal velocity and acceleration. |
| 3. Identify the difference between Simple Harmonic motion and Motion under other laws. |
| 4. Understand the Kepler's laws of Motion. |
| 5. Evaluate the Virtual work. |
| 6. Solve the centre of gravity concept. |

Recommended Books:

1. R.S. Verma - A Text Book on Statics, Pothishala Pvt. Ltd., Allahabad.
2. S.L. Loney - An Elementary Treatise on the Dynamics of a Particle and of Rigid Bodies, Kalyani Publishers, New Delhi.
3. J.L. Synge & B.A. Griffith - Principles of Mechanics, Tata McGraw-Hill, 1959.


Dean

Faculty of Education
Invertis University
Bareilly-243123, U.P


Head
Department of Education
Faculty of Education & Mass Comm.
Invertis University, Bareilly (U.P)


Registrar
Invertis University
Bareilly