**AM 1100: ENGINEERING MECHANICS**

**Course Content:**

Equilibrium of rigid bodies, free body diagram, Analysis of beams and trusses, Equilibrium of continuous systems -derivation of relation between load, shear force and bending moment. Energy conservation in rigid bodies -potential energy and elastic energy. Virtual work in multibody assemblies. Lumped mass models in Dynamics -Particle motion in cylindrical c0ordinates, engineering applications of central force motion. Kinetics of rigid bodies -translation and rotation motion of a rigid body, relative motion with translating and rotating axes and Coriolis acceleration. Kinematics of rigid bodies -3-D properties of sections, angular momentum of rigid bodies and energy relations for rigid bodies. Mechanical vibrations of single degree of freedom systems -free vibration of rigid bodies, general equations of motion and response to forced sinusoidal loading.

**Text Books:**


**Reference Books:**

1. **Beer F.P. and Johnston E.R.,** Vector Mechanics for Engineers - Volume I - Statics, Volume II - Dynamics, McGraw Hill, New York.
2. **Merlam J.L and Kraige L.G.,** Engineering Mechanics, Volume I - statics, Volume 11-dynamics, John Wiley & Sons, New York.
3. **Shames L.H.,** Engineering Mechanics, Prentice Hall, New Delhi

**Prerequisite:**

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