NPTEL Video Course - Mechanical Engineering - NOC:Mechanics

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Co-ordinating Institute - IIT - Roorkee

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 30 - Coordinate systems: Cartesian and planar polar coordinates
Lecture 31 - Coordinate systems: spherical coordinates
Lecture 32 - Coordinate systems: cylindrical coordinates
Lecture 33 - Cartesian and planar polar coordinates: examples
Lecture 34 - Spherical and cylindrical coordinates: examples
Lecture 35 - Equation of motion in different coordinate systems
Lecture 36 - Equation of motion: examples
Lecture 37 - Work energy method
Lecture 38 - Work energy method: examples
Lecture 39 - Impulse momentum relation
Lecture 40 - Variable mass
Lecture 41 - Direct central impact
Lecture 42 - Oblique central impact
Lecture 43 - Moment of inertia
Lecture 44 - Moment of inertia: examples
Lecture 45 - Moment of inertia of composite bodies
Lecture 46 - Product of inertia and principal axes of inertia
Lecture 47 - Principal axes of inertia: examples - I
Lecture 48 - Principal axes of inertia: examples - II
Lecture 49 - Harmonic oscillator: simple harmonic motion
Lecture 50 - Simple harmonic motion: examples
Lecture 51 - Damped harmonic oscillator
Lecture 52 - Translation and rotation of rigid bodies
Lecture 53 - Translation and rotation of rigid bodies: examples
Lecture 54 - Plane motion of a rigid body
Lecture 55 - Plane motion of a rigid body: work energy equation
Lecture 56 - Plane motion of a rigid body: impulse-momentum equation
Lecture 57 - Three-dimensional dynamics of rigid bodies: angular momentum
Lecture 58 - Eulerâ s equations of motion
Lecture 59 - Eulerâ s equations of motion: examples
Lecture 60 - Revision: Dynamics