

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mechanical Engineering - NOC:Basics of Mechanical Engineering - 1

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Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Units, Dimensions, and Dimensional Analysis - Part 1
Lecture 2 - Units, Dimensions, and Dimensional Analysis - Part 2
Lecture 3 - Laws of Motion, Inertia and Momentum
Lecture 4 - Scalars and Vectors, Vector Algebra
Lecture 5 - Statics, Kinetics and Kinematics
Lecture 6 - Friction and Lubrication
Lecture 7 - Moment of Inertia and Gravity
Lecture 8 - Mechanical Properties - Stress Strain and Residual Stress
Lecture 9 - Stress Strain Curve, Elasticity and Poission's Ratio
Lecture 10 - Principal Stress and Castigliano's Theorem
Lecture 11 - Hardness, Toughness, Impact and Creep
Lecture 12 - Homogeneous Materials, Isotropic and Anisotropic Materials
Lecture 13 - Static and Fatigue Loading, Critical Loads - Part 1
Lecture 14 - Static and Fatigue Loading, Critical Loads - Part 2
Lecture 15 - Tutorial-1 - Part 1
Lecture 16 - Tutorial-1 - Part 2
Lecture 17 - Tutorial-2 - Part 1
Lecture 18 - Tutorial-2 - Part 2
Lecture 19 - Stress in Cylinders and Spheres - Part 1
Lecture 20 - Stress in Cylinders and Spheres - Part 2
Lecture 21 - Buckling of columns
Lecture 22 - Materials, Metals and Composites - Part 1
Lecture 23 - Materials, Metals and Composites - Part 2
Lecture 24 - Mohr's circle
Lecture 25 - Shear Force and Bending Moment Diagram - Part 1
Lecture 26 - Shear Force and Bending Moment Diagram - Part 2
Lecture 27 - Shear Force and Bending Moment Diagram - Part 3
Lecture 28 - Factor of Safety, Degree of Freedom, Endurance Limit
Lecture 29 - Tutorial-3 - Part 1

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- Lecture 30 - Tutorial-3 - Part 2
- Lecture 31 - Linkages and Mechanisms
- Lecture 32 - Stress Concentration and Notch Sensitivity - Part 1
- Lecture 33 - Stress Concentration and Notch Sensitivity - Part 2
- Lecture 34 - Brittleness and ductility
- Lecture 35 - Testing for Tension
- Lecture 36 - Testing for Compression
- Lecture 37 - Testing for bending
- Lecture 38 - Testing for impact loads
- Lecture 39 - Testing for hardness, and fracture
- Lecture 40 - Spring-Mass Systems - Part 1
- Lecture 41 - Spring-Mass Systems - Part 2
- Lecture 42 - Gears: Basic Concepts
- Lecture 43 - Cam and Follower Design
- Lecture 44 - Couplings and Shafts
- Lecture 45 - Keys, Nuts, Bolts, Screws and Fasteners
- Lecture 46 - Chains, Pulleys, and Belts
- Lecture 47 - Clutches, Brakes and Flywheels
- Lecture 48 - Permanent Joints
- Lecture 49 - Vibration and Acoustics
- Lecture 50 - Introduction to Engineering Statistics