

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

NPTEL Video Course - Civil Engineering - NOC:Structural Dynamics

Subject Co-ordinator - Prof. Ramancharala Pradeep Kumar

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Module 1: Introduction of Structural Dynamics
Lecture 2 - Module 2: Types of Analysis
Lecture 3 - Module 3: Degrees of Freedom
Lecture 4 - Module 4: Vibrations of SDOF Systems
Lecture 5 - Module 5: Methods Solution of Equilibrium Equation
Lecture 6 - Module 6: UnDamped free Vibration
Lecture 7 - What is MATLAB?
Lecture 8 - Getting Started with MATLAB Online
Lecture 9 - MATLAB Variables
Lecture 10 - MATLAB as a Calculator
Lecture 11 - MATLAB Functions
Lecture 12 - Creating Vectors
Lecture 13 - Creating Uniformly Spaced Vectors (Colon Operator)
Lecture 14 - Creating Uniformly Spaced Vectors (Linspace)
Lecture 15 - Accessing Elements of a Vector
Lecture 16 - Calculations with Vectors
Lecture 17 - Creating Matrices
Lecture 18 - Matrix Creation Functions
Lecture 19 - Accessing Elements of a Matrix
Lecture 20 - Matrix Multiplication
Lecture 21 - Logical Operators
Lecture 22 - Writing a FOR Loop
Lecture 23 - If - Else Statements
Lecture 24 - While Loop
Lecture 25 - Line Plots
Lecture 26 - Annotating Graphs
Lecture 27 - Exploring Figures in MATLAB Online
Lecture 28 - Damped Free Vibration
Lecture 29 - Types of Damping

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- Lecture 30 - Logarithmic Decrement
- Lecture 31 - Dynamic Equilibrium Equation Using Energy Method
- Lecture 32 - Module 1: UnDamped Forced Vibration
- Lecture 33 - Module 2: Damped Forced Vibration
- Lecture 34 - Module 3: Relationship between R_d , R_v & R_a
- Lecture 35 - Module 4: Resonant Frequency & Half Power Band Width
- Lecture 36 - Module 5: Transmissibility
- Lecture 37 - Module 1: Response to Arbitrary Force
- Lecture 38 - Module 2: Special Cases in Arbitrary Force
- Lecture 39 - Module 3: Fourier Transformation
- Lecture 40 - Module 1: Numerical Methods
- Lecture 41 - Module 2: Methods Based on Interpolation of Excitation
- Lecture 42 - Module 3: Central Difference Method
- Lecture 43 - Module 4: Numerical Methods based on Variation of Acceleration: Newmark's Method
- Lecture 44 - Central Difference Method (Tutorial)
- Lecture 45 - Module 1: Response Spectrum
- Lecture 46 - Module 2: Special Cases of Response Spectrum
- Lecture 47 - Module 3: Development of Tripartite Plot
- Lecture 48 - Module 1: Multi-Degree of Freedom System
- Lecture 49 - Module 2: Multi-Degree of Freedom System: Solution of Equilibrium Equation
- Lecture 50 - Module 3: Multi-Degree of Freedom System: Modal Orthogonality
- Lecture 51 - Module 4: Approximate Methods For Finding Natural Frequency
- Lecture 52 - Tutorial 01: Generation of Mass Matrix
- Lecture 53 - Tutorial 2: Eigen vector and Modal Orthogonality
- Lecture 54 - Module 1: Time History Analysis
- Lecture 55 - Module 2: Response Spectrum Analysis
- Lecture 56 - Module 1: Three Dimensional Dynamic Analysis
- Lecture 57 - Module 2: Generation of Elastic Design Response Spectra
- Lecture 58 - W09T01: Centre of Mass & Centre of Stiffness
- Lecture 59 - Module 1: Vibration of Continuous Systems
- Lecture 60 - Module 2: Example Problem on Continuous system
- Lecture 61 - Module 3: Theory of Seismometer
- Lecture 62 - Module 1: Dynamics of Non Structural Elements
- Lecture 63 - Module 2: Non Structural Elements Example
- Lecture 64 - W11T: Non Structural Elements
- Lecture 65 - Module 1: Classical and Non-classical Damping
- Lecture 66 - Module 2: Vibration Control
- Lecture 67 - Module 3: Base Isolation
- Lecture 68 - Module 4: Tuned Mass Damper

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