

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

NPTEL Video Course - Aerospace Engineering - NOC:Introduction to Finite Volume Methods-I

Subject Co-ordinator - Prof. Ashoke De

Co-ordinating Institute - IIT - Kanpur

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

- Lecture 1 - Introduction to Finite Volume Method
- Lecture 2 - Governing Equations and Discretization
- Lecture 3 - Boundary Conditions and Classification of PDEs
- Lecture 4 - Mathematical Description of fluid flow - I
- Lecture 5 - Mathematical description of fluid flow - II
- Lecture 6 - Discretization Process - I
- Lecture 7 - Discretization Process - II
- Lecture 8 - Discretization Process - III
- Lecture 9 - Taylor Series - I
- Lecture 10 - Taylor Series - II
- Lecture 11 - Derivatives and Errors - I
- Lecture 12 - Derivatives and errors - II
- Lecture 13 - Grid Transformation
- Lecture 14 - Finite Volume Formulation - I
- Lecture 15 - Finite Volume Formulation - II
- Lecture 16 - Properties of discretized equations
- Lecture 17 - Introduction to Finite Volume Mesh
- Lecture 18 - Structured Mesh System
- Lecture 19 - Unstructured Mesh System - I
- Lecture 20 - Unstructured Mesh System - II
- Lecture 21 - Properties of Unstructured Mesh - I
- Lecture 22 - Properties of Unstructured Mesh - II
- Lecture 23 - Finite Volume discretization of Diffusion Equation - I
- Lecture 24 - Finite Volume discretization of Diffusion equation - II
- Lecture 25 - Finite Volume discretization of Diffusion equation - III
- Lecture 26 - Discretization of Diffusion Equation for Cartesian orthogonal systems - I
- Lecture 27 - Discretization of Diffusion Equation for Cartesian orthogonal systems - II
- Lecture 28 - Calculation of Diffusivity
- Lecture 29 - Discretization of Diffusion Equation for non-Cartesian orthogonal systems - I

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- Lecture 30 - Discretization of Diffusion Equation for non-orthogonal systems - I
- Lecture 31 - Discretization of Diffusion Equation for non-orthogonal systems - II
- Lecture 32 - Discretization of Diffusion Equation for non-orthogonal systems - III
- Lecture 33 - Gradient Calculation for Diffusion Equation - I
- Lecture 34 - Gradient Calculation for Diffusion Equation - II
- Lecture 35 - Gradient Calculation for Diffusion Equation - III
- Lecture 36 - Properties of matrices - I
- Lecture 37 - Properties of matrices - II
- Lecture 38 - Error Analysis - I
- Lecture 39 - Error Analysis - II
- Lecture 40 - Error Analysis - III