NPTEL Video Course - Civil Engineering - NOC:Fluid Mechanics

Subject Co-ordinator - Dr. Subhashisa Dutta

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Basic Concepts of Fluid
Lecture 2 - Properties of Fluid
Lecture 3 - Properties of Fluid
Lecture 4 - Concepts of Hydrostatic
Lecture 5 - Measurement of Pressure and Hydrostatic forces
Lecture 6 - Buoyancy, Metacentre, Stability and Rigid body motion
Lecture 7 - Reynolds Transport Theorem
Lecture 8 - Conservation of Mass
Lecture 9 - Conservation of Momentum
Lecture 10 - Conservation of Momentum Applications
Lecture 11 - Bernoulliâ s Equation
Lecture 12 - Applications of Bernoulliâ s Equation
Lecture 13 - Fluid Statics Applications: Example Problems
Lecture 14 - Conservation of Momentum: Example problems
Lecture 15 - Bernoulliâ s Equation: Problems Solving on Black Board
Lecture 16 - Lagrangian and Eulerian Descriptions
Lecture 17 - Motion and deformation of fluid elements
Lecture 18 - Problems Solving on Black Board
Lecture 19 - Dimensional Homogeneity
Lecture 20 - Dimensional Analysis and Similarity
Lecture 21 - Laminar and Turbulent Flows
Lecture 22 - Losses in Pipe Fittings
Lecture 23 - Flow in Noncircular Conduits and Multiple Path Pipeflow
Lecture 24 - Mass Conservation Equation - I
Lecture 25 - Mass Conservation Equation - II
Lecture 26 - Stream Function
Lecture 27 - Cauchy's Equation
Lecture 28 - The Navier-Stokes Equation - Part I
Lecture 29 - The Navier-Stokes Equation - Part II

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Lecture 30 - The Navier-Stokes Equation - Part III
Lecture 31 - Approximate solutions of Navier Stokes Equation: Bounary Layer Approximation
Lecture 32 - Boundary Layer Approximation - II
Lecture 33 - Boundary Layer Approximation - III
Lecture 34 - Open Channel Flow - I
Lecture 35 - Open Channel Flow - II
Lecture 36 - Open Channel Flow - III
Lecture 37 - Drag and Lift
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