

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

NPTEL Video Course - Mechanical Engineering - NOC:Ideal Fluid Flows using Complex Analysis

Subject Co-ordinator - Prof. Amit Gupta

Co-ordinating Institute - IIT - Delhi

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

- Lecture 1 - Ideal fluids, Velocity potential, Potential flows
- Lecture 2 - Stream function, Orthogonality of streamlines and equipotential lines
- Lecture 3 - Complex variables, Analyticity, Cauchy - Riemann equations, Complex potential, Complex velocity
- Lecture 4 - Elementary flows : Uniform flow, Source and Sink, Free vortex
- Lecture 5 - Flow in a bend, Flow around a sharp edge
- Lecture 6 - Superposition of source and sink : doublet flow
- Lecture 7 - Superposition of uniform flow and doublet
- Lecture 8 - Superposition of uniform flow, doublet and free vortex
- Lecture 9 - Superposition of source and uniform flow
- Lecture 10 - Problem solving session - 1
- Lecture 11 - Problem solving session - 2
- Lecture 12 - Method of images, Forces on a body, Blasius theorem
- Lecture 13 - Calculation of forces using derived flow field
- Lecture 14 - Introduction to conformal transformation
- Lecture 15 - Singularities and their transformations