

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

NPTEL Video Course - Chemical Engineering - NOC:Heat Transfer

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Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Introduction
- Lecture 2 - Introduction to Conduction
- Lecture 3 - Energy Balance
- Lecture 4 - 1D Steadystate Conduction - Resistance Concept
- Lecture 5 - Resistances in Composite Wall Case
- Lecture 6 - Resistances in Radial Systems
- Lecture 7 - Heat Generation - I Plane and Cylindrical Wall
- Lecture 8 - Heat Generation - II Problem; Introduction to Extended Surfaces
- Lecture 9 - Extended Surfaces I - General Formulation
- Lecture 10 - Extended Surfaces II - Fixed Cross-section Area
- Lecture 11 - Extended Surfaces III - Varying Cross-section Area
- Lecture 12 - 2D Plane Wall
- Lecture 13 - Transient Analyses I
- Lecture 14 - Transient Analyses II
- Lecture 15 - Transient Analyses
- Lecture 16 - Introduction to Convective Heat Transfer
- Lecture 17 - Heat and Mass Transport Coefficients
- Lecture 18 - Boundary Layer
- Lecture 19 - Laminar and Turbulent Flows; Momentum Balance
- Lecture 20 - Energy and Mass Balances; Boundary Layer Approximations
- Lecture 21 - Order of Magnitude Analysis
- Lecture 22 - Transport Coefficients
- Lecture 23 - Relationship between Momentum, Thermal and Concentration Boundary Layer
- Lecture 24 - Reynolds and Chilton-Colburn Analogies
- Lecture 25 - Forced Convection
- Lecture 26 - Flow Past Flat Plate I - Method of Blasius
- Lecture 27 - Flow Past Flat Plate II - Correlations for Heat and Mass Transport
- Lecture 28 - Flow Past Cylinders
- Lecture 29 - Flow through Pipes - I

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- Lecture 30 - Flow through Pipes - II
- Lecture 31 - Flow through Pipes - III
- Lecture 32 - Flow through Pipes - IV - Mixing-cup Temperature
- Lecture 33 - Flow through Pipes - V - Log mean Temperature Difference
- Lecture 34 - Flow through Pipes - VI - Correlations for Laminar and Turbulent Conditions
- Lecture 35 - Example problems
- Lecture 36 - Introduction to Free/Natural Convection
- Lecture 37 - Heated Plate in a Quiescent Fluid - I
- Lecture 38 - Heated Plate in a Quiescent Fluid - II
- Lecture 39 - Boiling - I
- Lecture 40 - Boiling - II
- Lecture 41 - Condensation - I
- Lecture 42 - Condensation - II
- Lecture 43 - Radiation
- Lecture 44 - Spectral Intensity
- Lecture 45 - Radiation
- Lecture 46 - Properties of a Blackbody
- Lecture 47 - Surface Adsorption
- Lecture 48 - Kirchoff's Law
- Lecture 49 - Radiation Exchange - View Factor
- Lecture 50 - View Factor Examples
- Lecture 51 - View Factor - Inside Sphere Method, Blackbody Radiation Exchange
- Lecture 52 - Diffuse, Gray Surfaces in an Enclosure
- Lecture 53 - Resistances - Oppenheim Matrix Method
- Lecture 54 - Resistances - Examples
- Lecture 55 - More Examples
- Lecture 56 - Introduction and Examples
- Lecture 57 - Parallel Flow Heat Exchangers
- Lecture 58 - LMTD I
- Lecture 59 - Shell and Tube Heat Exchangers
- Lecture 60 - Epsilon-NTU Method