

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

NPTEL Video Course - Chemical Engineering - NOC:Heat Transfer (2018)

Subject Co-ordinator - Prof. Sunando Dasgupta

Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Introduction to Heat Transfer
- Lecture 2 - Introduction to Heat Transfer
- Lecture 3 - Heat Diffusion Equation
- Lecture 4 - Relevant Boundary Conditions in Conduction
- Lecture 5 - One Dimensional Steady State Conduction
- Lecture 6 - Temperature Distribution in Radial Systems
- Lecture 7 - Tutorial Problem on Critical Insulation Thickness
- Lecture 8 - Heat Source Systems
- Lecture 9 - Tutorial Problems of Heat Generating Systems
- Lecture 10 - Transient Conduction
- Lecture 11 - Lumped Capacitance (Continued...) and Tutorial Problem
- Lecture 12 - Transient heat Conduction
- Lecture 13 - Transient Conduction - Heisler Chart
- Lecture 14 - Heat Transfer from Extended Surface
- Lecture 15 - Fins and General Conduction Analysis
- Lecture 16 - Fundamentals of Convection
- Lecture 17 - Equations of Change for Non-isothermal Systems
- Lecture 18 - Equations of Change for Non-isothermal Systems (Continued...)
- Lecture 19 - Tutorial on the Application of Energy Equation
- Lecture 20 - Nusselt Number of a heated sphere in Stagnant Air
- Lecture 21 - Momentum and Thermal Boundary Layers
- Lecture 22 - The Flat Plate in Parallel Flow - Hydrodynamics and Momentum Transfer
- Lecture 23 - The Flat Plate in Parallel Flow - Heat Transfer
- Lecture 24 - The Effects of Turbulence
- Lecture 25 - Turbulent External Flow
- Lecture 26 - Heat and Momentum Transfer Analogy
- Lecture 27 - Mixed Boundary Layers
- Lecture 28 - Tutorial Problem on External Flow and Behavior of Heat Transfer Coefficient
- Lecture 29 - Tutorial Problem in External Flow and Convection

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- Lecture 30 - Tutorial Problem in External Flow and Convection
- Lecture 31 - Tutorial Problem in External Flow and Convection
- Lecture 32 - Internal Flow Heat Transfer
- Lecture 33 - Internal Flow Heat Transfer (Continued...)
- Lecture 34 - Internal Flow Heat Transfer (Continued...)
- Lecture 35 - Internal Flow and Heat Transfer (Continued...)
- Lecture 36 - Internal Flow and Heat Transfer (Tutorial)
- Lecture 37 - Free Convection
- Lecture 38 - Heat Exchangers
- Lecture 39 - Heat Exchangers
- Lecture 40 - Heat Exchangers
- Lecture 41 - Tutorial Problems on Heat Exchanger Calculations
- Lecture 42 - Tutorial Problem on LMTD and Dirt Factor
- Lecture 43 - Epsilon-NTU Method - 1
- Lecture 44 - Epsilon-NTU Method - 1 (Continued...)
- Lecture 45 - Tutorial Problems on Epsilon - NTU Methods
- Lecture 46 - Tutorial Problems on Epsilon - NTU Methods
- Lecture 47 - Boiling, Evaporation and Evaporators
- Lecture 48 - Radiation - Fundamental Concepts
- Lecture 49 - Spectral Blackbody Radiation Intensity and Emissive Power
- Lecture 50 - Wein's Law, Stephen Boltzmann Law, Blackbody Radiation Function, Tutorial Problem
- Lecture 51 - Kirchhoff's Law
- Lecture 52 - Tutorial on Emissivity, Absorptivity and Blackbody Radiation Functions
- Lecture 53 - Solar Radiation and the Concept of View Factors
- Lecture 54 - Determination of View Factors
- Lecture 55 - Radiosity Blackbody Radiation Exchanges, Relevant Problem
- Lecture 56 - Network Method for Radiation Exchange in an Enclosure
- Lecture 57 - Network Method - Two and Three Zone Enclosures
- Lecture 58 - Tutorial Problem on Radiation Exchange using the Network Method
- Lecture 59 - Radiation Shields
- Lecture 60 - Gaseous Radiation (Participating Medium)