

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

NPTEL Video Course - Chemical Engineering - NOC:Plant Design and Economics

Subject Co-ordinator - Prof. Debasis Sarkar

Co-ordinating Institute - IIT - Kharagpur

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

Lecture 1 - Introduction
Lecture 2 - Typical Design Steps
Lecture 3 - Flow Diagram
Lecture 4 - Flow Diagram - Mass and Energy Balance
Lecture 5 - Piping and Instrumentation Diagram
Lecture 6 - Selection of Process Equipment
Lecture 7 - Process Utilities
Lecture 8 - Plant Location
Lecture 9 - Site and Plant Layout
Lecture 10 - Heuristics in Process Synthesis and Design
Lecture 11 - Capital Investment
Lecture 12 - Capital Cost Estimates
Lecture 13 - Cost Components in Capital Investments
Lecture 14 - Methods of Capital Cost Estimates
Lecture 15 - Estimation of Total Product Cost
Lecture 16 - Different Types of Interest
Lecture 17 - Continuous Interest, Cash Flow Diagram, Time Value of Money
Lecture 18 - Uniform Cash Flows and Continuous Flows
Lecture 19 - Income Tax and Depreciation
Lecture 20 - Depreciation
Lecture 21 - Cumulative Cash Flow and Profitability Standards
Lecture 22 - Profitability Analysis
Lecture 23 - Profitability Analysis (Continued...)
Lecture 24 - Profitability Analysis (Continued...)
Lecture 25 - Alternative Investment, Replacement and Sensitivity Analysis
Lecture 26 - Introduction to Process Synthesis
Lecture 27 - Hierarchical Approach to Process Synthesis - I
Lecture 28 - Hierarchical Approach to Process Synthesis - II
Lecture 29 - Hierarchical Approach to Process Synthesis - III

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- Lecture 30 - Hierarchical Approach to Process Synthesis - IV
- Lecture 31 - Basic Reactor Principles
- Lecture 32 - Reactor Synthesis for Complex Reactions by Attainable Region
- Lecture 33 - Reactor Synthesis for Complex Reactions by Attainable Region
- Lecture 34 - Reactor Synthesis for Complex Reactions by Attainable Region
- Lecture 35 - General Procedure for Reactor Design and Cost Estimation
- Lecture 36 - Introduction to Separation Systems
- Lecture 37 - Selection Criteria for Separation Processes
- Lecture 38 - Design of Multi-component Distillation Column
- Lecture 39 - Design of Multi-component Distillation Column
- Lecture 40 - Introduction to Sequencing of Ordinary Distillation Columns
- Lecture 41 - Sequences for Simple Nonintegrated Distillation Columns
- Lecture 42 - Distillation Sequencing using Columns with Sidestreams
- Lecture 43 - Distillation Sequencing using Thermal Coupling
- Lecture 44 - Azeotropic Distillation
- Lecture 45 - Azeotropic Distillation Methods and Cost Estimation
- Lecture 46 - Introduction to Pinch Technology
- Lecture 47 - Composite Curves
- Lecture 48 - The Problem Table Method
- Lecture 49 - The Heat Recovery Pinch and The Grand Composite Curve
- Lecture 50 - Heat Exchanger Network Design
- Lecture 51 - Introduction
- Lecture 52 - Fires and Explosions
- Lecture 53 - Fires and Explosions
- Lecture 54 - Toxic Release, Hazard Identification and MSDS
- Lecture 55 - Inherently Safer Design
- Lecture 56 - Optimality Criteria for Unconstrained Functions
- Lecture 57 - Examples
- Lecture 58 - Equality Constrained Problems
- Lecture 59 - Linear Programming Problems
- Lecture 60 - Batch Process Scheduling