

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

NPTEL Video Course - Chemical Engineering - NOC:Chemical Engineering Thermodynamics (2019)

Subject Co-ordinator - Dr. Jayant K. Singh

Co-ordinating Institute - IIT - Kanpur

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

Lecture 1 - Introduction
Lecture 2 - Measurability and controllability of energy
Lecture 3 - Postulates of thermodynamics - I
Lecture 4 - Postulates of thermodynamics - II
Lecture 5 - Definition of intensive variables and driving forces for temperature and pressure flow
Lecture 6 - Driving force for the matter flow
Lecture 7 - Basic properties, phase diagram, and thermodynamic table
Lecture 8 - Work, and heat
Lecture 9 - First law of thermodynamics for closed system
Lecture 10 - First law of thermodynamics
Lecture 11 - First law of thermodynamics for open system
Lecture 12 - First law of thermodynamics
Lecture 13 - The second law of the thermodynamics
Lecture 14 - Carnot cycle and thermodynamic temperature
Lecture 15 - The concept of entropy
Lecture 16 - Maximum work and entropy of ideal gas
Lecture 17 - Power cycles and examples
Lecture 18 - Mathematical properties of fundamental equations
Lecture 19 - Generalized thermodynamic potential - I
Lecture 20 - Generalized thermodynamic potential - II
Lecture 21 - Multivariable Calculus
Lecture 22 - Maxwell's relations and examples
Lecture 23 - Jacobian method and its applications
Lecture 24 - Equilibrium and stability - I
Lecture 25 - Equilibrium and stability - II
Lecture 26 - Stability criteria
Lecture 27 - Intrinsic stability of thermodynamic system
Lecture 28 - Phase transitions
Lecture 29 - Clapeyron Equation and Vapour Pressure Correlations

Get Digi-MAT (Digital Media Access Terminal) For High-Speed Video Streaming of NPTEL and Educational Video Courses in LAN

www.digimat.in

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

- Lecture 30 - Equation of state
- Lecture 31 - Equation of state (Continued...)
- Lecture 32 - Repulsive Interaction
- Lecture 33 - Fugacity
- Lecture 34 - Thermodynamics of mixtures
- Lecture 35 - Partial molar properties and examples
- Lecture 36 - Examples of partial molar properties for real processes
- Lecture 37 - Obtaining the partial molar properties from experimental data
- Lecture 38 - Partial molar properties of ideal gas mixtures
- Lecture 39 - Chemical potential of ideal gas mixtures
- Lecture 40 - Fugacity coefficient in terms of measurable properties
- Lecture 41 - Fugacity coefficient for mixtures
- Lecture 42 - Fugacity coefficient for ideal mixtures
- Lecture 43 - Activity coefficient for mixtures
- Lecture 44 - Gibbs - Duhem relations and its impacts on the activity
- Lecture 45 - Excess Gibbs free energy model - I
- Lecture 46 - Two suffix Margules equation
- Lecture 47 - Excess Gibbs free energy model - II
- Lecture 48 - Vapor Liquid Equilibria
- Lecture 49 - Vapor Liquid Equilibria (examples)
- Lecture 50 - Vapor Liquid Equilibria (non-ideal mixtures - I)
- Lecture 51 - Vapor Liquid Equilibria (non-ideal mixtures - II)
- Lecture 52 - Azeotropes
- Lecture 53 - Azeotrope (binary mixture)
- Lecture 54 - Liquid-Liquid equilibria - 1
- Lecture 55 - liquid-liquid equilibria (Continued...) and solid-liquid equilibria
- Lecture 56 - Solid-liquid equilibria (Continued...)
- Lecture 57 - Solid-liquid equilibria examples and properties
- Lecture 58 - Examples of boiling point elevation
- Lecture 59 - Solubility of gases in the liquid
- Lecture 60 - Chemical reaction equilibria - I
- Lecture 61 - Chemical reaction equilibria - II
- Lecture 62 - Chemical reaction equilibria - III
- Lecture 63 - Chemical reaction equilibria - IV