

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

NPTEL Video Course - Physics - NOC:Introduction to Statistical Mechanics

Subject Co-ordinator - Prof.Girish S. Setlur

Co-ordinating Institute - IIT - Guwahati

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

Lecture 1 - Prerequisites and Introduction  
Lecture 2 - Combinatorics and Entropy  
Lecture 3 - Method of steepest descent  
Lecture 4 - Bose and Fermi gases  
Lecture 5 - Maxwell Boltzmann distribution  
Lecture 6 - Thermodynamic potentials  
Lecture 7 - Legendre transformation  
Lecture 8 - Specific heats of quantum gases  
Lecture 9 - Low and high temperature equations of state  
Lecture 10 - Chandrasekhar Limit  
Lecture 11 - Radiation thermodynamics  
Lecture 12 - Thermodynamics of black holes  
Lecture 13 - Van der Waals fluid  
Lecture 14 - Landau Diamagnetism  
Lecture 15 - Relations between ensembles and Pauli paramagnetism  
Lecture 16 - Ferromagnetism  
Lecture 17 - Correlations and Mean Field  
Lecture 18 - Theories of Specific Heat of Solids  
Lecture 19 - Tutorial - I  
Lecture 20 - Tutorial - II  
Lecture 21 - Tutorial - III  
Lecture 22 - Tutorial - IV  
Lecture 23 - Tutorial - V  
Lecture 24 - RG method Ising model  
Lecture 25 - Introduction to Second Quantisation  
Lecture 26 - Quantum Theory of EM Field - I  
Lecture 27 - Quantum Theory of EM Field - II  
Lecture 28 - Creation and Annihilation in Fock Space - I  
Lecture 29 - Creation and Annihilation in Fock Space - II

---

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

[www.digimat.in](http://www.digimat.in)

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

---

- Lecture 30 - Green functions in many particle systems
- Lecture 31 - Second quantised hamiltonians
- Lecture 32 - Current algebra