

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

NPTEL Video Course - Mathematics - NOC:Graph Theory

Subject Co-ordinator - Dr. Soumen Maity

Co-ordinating Institute - IISER - Pune

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

Lecture 1 - Basic Concepts  
Lecture 2 - Basic Concepts - 1  
Lecture 3 - Eulerian and Hamiltonian Graph  
Lecture 4 - Eulerian and Hamiltonian Graph - 1  
Lecture 5 - Bipartite Graph  
Lecture 6 - Bipartite Graph  
Lecture 7 - Diameter of a graph; Isomorphic graphs  
Lecture 8 - Diameter of a graph; Isomorphic graphs  
Lecture 9 - Minimum Spanning Tree  
Lecture 10 - Minimum Spanning Trees (Continued...)  
Lecture 11 - Minimum Spanning Trees (Continued...)  
Lecture 12 - Minimum Spanning Trees (Continued...)  
Lecture 13 - Maximum Matching in Bipartite Graph  
Lecture 14 - Maximum Matching in Bipartite Graph - 1  
Lecture 15 - Hall's Theorem and Konig's Theorem  
Lecture 16 - Hall's Theorem and Konig's Theorem - 1  
Lecture 17 - Independent Set and Edge Cover  
Lecture 18 - Independent Set and Edge Cover - 1  
Lecture 19 - Matching in General Graphs  
Lecture 20 - Proof of Halls Theorem  
Lecture 21 - Stable Matching  
Lecture 22 - Gale-Shapley Algorithm  
Lecture 23 - Graph Connectivity  
Lecture 24 - Graph Connectivity - 1  
Lecture 25 - 2-Connected Graphs  
Lecture 26 - 2-Connected Graphs - 1  
Lecture 27 - Subdivision of an edge; 2-edge-connected graphs  
Lecture 28 - Problems Related to Graphs Connectivity  
Lecture 29 - Flow Network

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- Lecture 30 - Residual Network and Augmenting Path
- Lecture 31 - Augmenting Path Algorithm
- Lecture 32 - Max-Flow and Min-Cut
- Lecture 33 - Max-Flow and Min-Cut Theorem
- Lecture 34 - Vertex Colouring
- Lecture 35 - Chromatic Number and Max. Degree
- Lecture 36 - Edge Colouring
- Lecture 37 - Planar Graphs and Euler's Formula
- Lecture 38 - Characterization Of Planar Graphs
- Lecture 39 - Colouring of Planar Graphs