

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

NPTEL Video Course - Chemical Engineering - Advanced Mathematical Techniques in Chemical Engineering

Subject Co-ordinator - Prof. S. De

Co-ordinating Institute - IIT - Kharagpur

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

- Lecture 1 - Introduction to vector space
- Lecture 2 - Introduction to vector space (Continued...)
- Lecture 3 - Onto, into, one to one function
- Lecture 4 - Vectors
- Lecture 5 - Vectors (Continued...)
- Lecture 6 - Contraction Mapping
- Lecture 7 - Contraction Mapping (Continued...)
- Lecture 8 - Matrix, Determinant
- Lecture 9 - Eigenvalue Problem in Discrete Domain
- Lecture 10 - Eigenvalue Problem in Discrete Domain (Continued...)
- Lecture 11 - Eigenvalue Problem in Discrete Domain (Continued...)
- Lecture 12 - Eigenvalue Problem in Discrete Domain (Continued...)
- Lecture 13 - Stability Analysis
- Lecture 14 - Stability Analysis (Continued...)
- Lecture 15 - Stability Analysis (Continued...)
- Lecture 16 - More Examples
- Lecture 17 - Partial Differential Equations
- Lecture 18 - Partial Differential Equations (Continued...)
- Lecture 19 - Eigenvalue Problem in Continuous Domain
- Lecture 20 - Special ODEs
- Lecture 21 - Adjoint Operator
- Lecture 22 - Theorems of Eigenvalues and Eigenfunction
- Lecture 23 - Solution PDE
- Lecture 24 - Solution of Parabolic PDE
- Lecture 25 - Solution of Parabolic PDE
- Lecture 26 - Solution of Higher Dimensional PDEs
- Lecture 27 - Solution of Higher Dimensional PDEs (Continued...)
- Lecture 28 - Four Dimensional Parabolic PDE
- Lecture 29 - Solution of Elliptic and Hyperbolic PDE

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- Lecture 30 - Solution of Elliptic and Hyperbolic PDE (Continued...)
- Lecture 31 - PDE in Cylindrical and Spherical Coordinate
- Lecture 32 - Solution of non-homogeneous PDE
- Lecture 33 - Solution of non-homogeneous PDE (Continued...)
- Lecture 34 - Solution of non-homogeneous Parabolic PDE
- Lecture 35 - Solution of non-homogeneous Elliptic PDE
- Lecture 36 - Solution of non-homogeneous Elliptic PDE (Continued...)
- Lecture 37 - Similarity Solution
- Lecture 38 - Similarity Solution (Continued...)
- Lecture 39 - Integral Method
- Lecture 40 - Laplace Transform
- Lecture 41 - Fourier Transform