

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

NPTEL Video Course - Mathematics - NOC:Linear Algebra (Prof. Pranav Haridas)

Subject Co-ordinator - Prof. Pranav Haridas

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Vector Spaces
Lecture 2 - Examples of Vector Spaces
Lecture 3 - Vector Subspaces
Lecture 4 - Linear Combinations and Span
Lecture 5 - Linear Independence
Lecture 6 - Basis
Lecture 7 - Dimension
Lecture 8 - Replacement theorem consequences
Lecture 9 - Rank Nullity
Lecture 10 - Linear Transformations
Lecture 11 - Linear Transformation Basis
Lecture 12 - Linear Transformation and Matrices
Lecture 13 - Problem session
Lecture 14 - Linear Transformation and Matrices (Continued...)
Lecture 15 - Invertible Linear Transformations
Lecture 16 - Invertible Linear Transformations and Matrices
Lecture 17 - Change of Basis
Lecture 18 - Product of Vector Spaces
Lecture 19 - Quotient Spaces
Lecture 20 - Dual Spaces
Lecture 21 - Row operations
Lecture 22 - Rank of a Matrix
Lecture 23 - Inverting matrices
Lecture 24 - Determinants
Lecture 25 - Problem Session
Lecture 26 - Diagonal Matrices
Lecture 27 - Eigenvectors and eigenvalues
Lecture 28 - Computing eigenvalues
Lecture 29 - Characteristic ploynomia

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- Lecture 30 - Diagonalizability
- Lecture 31 - Multiplicity of eigenvalues
- Lecture 32 - Invariant subspaces
- Lecture 33 - Complex Vector Spaces
- Lecture 34 - Inner Product Spaces
- Lecture 35 - Inner Product and Length
- Lecture 36 - Orthogonality
- Lecture 37 - Problem Session
- Lecture 38 - Problem Session
- Lecture 39 - Orthonormal Basis
- Lecture 40 - Gram Schmidt Orthogonalization
- Lecture 41 - Orthogonal Complements
- Lecture 42 - Problem Session
- Lecture 43 - Riesz Representation Theorem
- Lecture 44 - Adjoint of a linear transformation
- Lecture 45 - Problem Session
- Lecture 46 - Normal Operators
- Lecture 47 - Self Adjoint Operators
- Lecture 48 - Spectral Theorem