

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

NPTEL Video Course - Mathematics - NOC:Linear Algebra

Subject Co-ordinator - Prof. Dilip P. Patil

Co-ordinating Institute - IISc - Bangalore

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

Lecture 1 - Introduction to Algebraic Structures - Rings and Fields
Lecture 2 - Definition of Vector Spaces
Lecture 3 - Examples of Vector Spaces
Lecture 4 - Definition of subspaces
Lecture 5 - Examples of subspaces
Lecture 6 - Examples of subspaces (Continued...)
Lecture 7 - Sum of subspaces
Lecture 8 - System of linear equations
Lecture 9 - Gauss elimination
Lecture 10 - Generating system, linear independence and bases
Lecture 11 - Examples of a basis of a vector space
Lecture 12 - Review of univariate polynomials
Lecture 13 - Examples of univariate polynomials and rational functions
Lecture 14 - More examples of a basis of vector spaces
Lecture 15 - Vector spaces with finite generating system
Lecture 16 - Steinitz's exchange theorem and examples
Lecture 17 - Examples of finite dimensional vector spaces
Lecture 18 - Dimension formula and its examples
Lecture 19 - Existence of a basis
Lecture 20 - Existence of a basis (Continued...)
Lecture 21 - Existence of a basis (Continued...)
Lecture 22 - Introduction to Linear Maps
Lecture 23 - Examples of Linear Maps
Lecture 24 - Linear Maps and Bases
Lecture 25 - Pigeonhole principle in Linear Algebra
Lecture 26 - Interpolation and the rank theorem
Lecture 27 - Examples
Lecture 28 - Direct sums of vector spaces
Lecture 29 - Projections

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 - Direct sum decomposition of a vector space
- Lecture 31 - Dimension equality and examples
- Lecture 32 - Dual spaces
- Lecture 33 - Dual spaces (Continued...)
- Lecture 34 - Quotient spaces
- Lecture 35 - Homomorphism theorem of vector spaces
- Lecture 36 - Isomorphism theorem of vector spaces
- Lecture 37 - Matrix of a linear map
- Lecture 38 - Matrix of a linear map (Continued...)
- Lecture 39 - Matrix of a linear map (Continued...)
- Lecture 40 - Change of bases
- Lecture 41 - Computational rules for matrices
- Lecture 42 - Rank of a matrix
- Lecture 43 - Computation of the rank of a matrix
- Lecture 44 - Elementary matrices
- Lecture 45 - Elementary operations on matrices
- Lecture 46 - LR decomposition
- Lecture 47 - Elementary Divisor Theorem
- Lecture 48 - Permutation groups
- Lecture 49 - Canonical cycle decomposition of permutations
- Lecture 50 - Signature of a permutation
- Lecture 51 - Introduction to multilinear maps
- Lecture 52 - Multilinear maps (Continued...)
- Lecture 53 - Introduction to determinants
- Lecture 54 - Determinants (Continued...)
- Lecture 55 - Computational rules for determinants
- Lecture 56 - Properties of determinants and adjoint of a matrix
- Lecture 57 - Adjoint-determinant theorem
- Lecture 58 - The determinant of a linear operator
- Lecture 59 - Determinants and Volumes
- Lecture 60 - Determinants and Volumes (Continued...)