NPTEL Video Course - Mathematics - NOC:Algebra - I

Subject Co-ordinator - Prof. Amritanshu Prasad, Prof. S. Viswanath

Co-ordinating Institute - IIT - Madras

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

Lecture 30 - Free Groups - IV
Lecture 31 - Problem Solving/Examples
Lecture 32 - Generators and relations for symmetric groups â I
Lecture 33 - Generators and relations for symmetric groups â II
Lecture 34 - Definition of a Ring
Lecture 35 - Euclidean Domains
Lecture 36 - Gaussian Integers
Lecture 37 - The Fundamental Theorem of Arithmetic
Lecture 38 - Divisibility and Ideals
Lecture 39 - Factorization and the Noetherian Condition
Lecture 40 - Examples of Ideals in Commutative Rings
Lecture 41 - Problem Solving/Examples
Lecture 42 - The Ring of Formal Power Series
Lecture 43 - Fraction Fields
Lecture 44 - Path Algebra of a Quiver
Lecture 45 - Ideals In Non-Commutative Rings
Lecture 46 - Product of Rings
Lecture 47 - Ring Homomorphisms
Lecture 48 - Quotient Rings
Lecture 49 - Problem solving
Lecture 50 - Tensor and Exterior Algebras
Lecture 51 - Modules
Lecture 52 - Modules over polynomial rings $K[x]$
Lecture 53 - Modules
Lecture 54 - Modules
Lecture 55 - Submodules
Lecture 56 - General constructions of submodules
Lecture 57 - Problem Solving
Lecture 58 - Quotient modules
Lecture 59 - Homomorphisms
Lecture 60 - More examples of homomorphisms
Lecture 61 - First isomorphism theorem
Lecture 62 - Direct sums of modules
Lecture 63 - Complementary submodules
Lecture 64 - Change of ring
Lecture 65 - Problem solving
Lecture 66 - Free Modules (finitely generated)
Lecture 67 - Determinants
Lecture 68 - Primary Decomposition

Lecture 69 - Problem solving
Lecture 70 - Finitely generated modules and the Noetherian condition
Lecture 71 - Counterexamples to the Noetherian condition
Lecture 72 - Generators and relations for Finitely Generated Modules
Lecture 73 - General Linear Group over a Commutative Ring
Lecture 74 - Equivalence of Matrices
Lecture 75 - Smith Canonical Form for a Euclidean domain
Lecture 76 - solved_problems1
Lecture 77 - Smith Canonical Form for PID
Lecture 78 - Structure of finitely generated modules over a PID
Lecture 79 - Structure of a finitely generated abelian group
Lecture 80 - Similarity of Matrices
Lecture 81 - Deciding Similarity
Lecture 82 - Rational Canonical Form
Lecture 83 - Jordan Canonical Form