

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

NPTEL Video Course - Computer Science and Engineering - NOC:Computational Arithmetic - Geometry for Algebraic

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Co-ordinating Institute - IIT - Kanpur

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

- Lecture 1 - Course outline and Fundamentals
- Lecture 2 - Ideals and Varieties
- Lecture 3 - Dimension of Varieties
- Lecture 4 - Projective varieties
- Lecture 5 - Morphisms and rational functions
- Lecture 6 - Local rings
- Lecture 7 - Rational maps and Birationality
- Lecture 8 - Tangent space and Singularities
- Lecture 9 - Resolution of singularities
- Lecture 10 - Discrete valuation rings
- Lecture 11 - Existence of nonsingular model
- Lecture 12 - Nonsingular curves
- Lecture 13 - Divisor on Curves
- Lecture 14 - Riemann-Roch Spaces - I
- Lecture 15 - Riemann-Roch Spaces - II
- Lecture 16 - Divisor Class Group
- Lecture 17 - Genus of a curve
- Lecture 18 - Riemann-Roch and Adeles
- Lecture 19 - Differentials and Riemann-Roch
- Lecture 20 - Canonical divisor and proof of Riemann-Roch
- Lecture 21 - Jacobian of a curve
- Lecture 22 - Zeta function of curves
- Lecture 23 - Functional equation and point counting
- Lecture 24 - Riemann hypothesis for curves
- Lecture 25 - Proof of RH for curves: Galois covers
- Lecture 26 - Proof of RH for curves II: Multilinear algebra
- Lecture 27 - Cohomological interpretation of zeta function

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