

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

NPTEL Video Course - Mathematics - NOC:A Basic Course in Number Theory

Subject Co-ordinator - Prof. Shripad Garge

Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Integers
- Lecture 2 - Divisibility and primes
- Lecture 3 - Infinitude of primes
- Lecture 4 - Division algorithm and the GCD
- Lecture 5 - Computing the GCD and Euclid's lemma
- Lecture 6 - Fundamental theorem of arithmetic
- Lecture 7 - Stories around primes
- Lecture 8 - Winding up on 'Primes' and introducing Congruences'
- Lecture 9 - Basic results in congruences
- Lecture 10 - Residue classes modulo n
- Lecture 11 - Arithmetic modulo n , theory and examples
- Lecture 12 - Arithmetic modulo n , more examples
- Lecture 13 - Solving linear polynomials modulo n - I
- Lecture 14 - Solving linear polynomials modulo n - II
- Lecture 15 - Solving linear polynomials modulo n - III
- Lecture 16 - Solving linear polynomials modulo n - IV
- Lecture 17 - Chinese remainder theorem, the initial cases
- Lecture 18 - Chinese remainder theorem, the general case and examples
- Lecture 19 - Chinese remainder theorem, more examples
- Lecture 20 - Using the CRT, square roots of 1 in $\mathbb{Z}/n\mathbb{Z}$
- Lecture 21 - Wilson's theorem
- Lecture 22 - Roots of polynomials over $\mathbb{Z}/p\mathbb{Z}$
- Lecture 23 - Euler ϕ -function - I
- Lecture 24 - Euler ϕ -function - II
- Lecture 25 - Primitive roots - I
- Lecture 26 - Primitive roots - II
- Lecture 27 - Primitive roots - III
- Lecture 28 - Primitive roots - IV
- Lecture 29 - Structure of U_n - I

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 - Structure of U_n - II
- Lecture 31 - Quadratic residues
- Lecture 32 - The Legendre symbol
- Lecture 33 - Quadratic reciprocity law - I
- Lecture 34 - Quadratic reciprocity law - II
- Lecture 35 - Quadratic reciprocity law - III
- Lecture 36 - Quadratic reciprocity law - IV
- Lecture 37 - The Jacobi symbol
- Lecture 38 - Binary quadratic forms
- Lecture 39 - Equivalence of binary quadratic forms
- Lecture 40 - Discriminant of a binary quadratic form
- Lecture 41 - Reduction theory of integral binary quadratic forms
- Lecture 42 - Reduced forms up to equivalence - I
- Lecture 43 - Reduced forms up to equivalence - II
- Lecture 44 - Reduced forms up to equivalence - III
- Lecture 45 - Sums of squares - I
- Lecture 46 - Sums of squares - II
- Lecture 47 - Sums of squares - III
- Lecture 48 - Beyond sums of squares - I
- Lecture 49 - Beyond sums of squares - II
- Lecture 50 - Continued fractions - basic results
- Lecture 51 - Dirichlet's approximation theorem
- Lecture 52 - Good rational approximations
- Lecture 53 - Continued fraction expansion for real numbers - I
- Lecture 54 - Continued fraction expansion for real numbers - II
- Lecture 55 - Convergents give better approximations
- Lecture 56 - Convergents are the best approximations - I
- Lecture 57 - Convergents are the best approximations - II
- Lecture 58 - Quadratic irrationals as continued fractions
- Lecture 59 - Some basics of algebraic number theory
- Lecture 60 - Units in quadratic fields
- Lecture 61 - Units in quadratic fields
- Lecture 62 - Brahmagupta-Pell equations
- Lecture 63 - Tying some loose ends