

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

NPTEL Video Course - Mathematics - Measure and Integration

Subject Co-ordinator - Prof. Inder K Rana

Co-ordinating Institute - IIT - Bombay

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

- Lecture 1 - Introduction, Extended Real numbers
- Lecture 2 - Algebra and Sigma Algebra of a subset of a set
- Lecture 3 - Sigma Algebra generated by a class
- Lecture 4 - Monotone Class
- Lecture 5 - Set function
- Lecture 6 - The Length function and its properties
- Lecture 7 - Countably additive set functions on intervals
- Lecture 8 - Uniqueness Problem for Measure
- Lecture 9 - Extension of measure
- Lecture 10 - Outer measure and its properties
- Lecture 11 - Measurable sets
- Lecture 12 - Lebesgue measure and its properties
- Lecture 13 - Characterization of Lebesgue measurable sets
- Lecture 14 - Measurable functions
- Lecture 15 - Properties of measurable functions
- Lecture 16 - Measurable functions on measure spaces
- Lecture 17 - Integral of non negative simple measurable functions
- Lecture 18 - Properties of non negative simple measurable functions
- Lecture 19 - Monotone convergence theorem & Fatou's Lemma
- Lecture 20 - Properties of Integral functions & Dominated Convergence Theorem
- Lecture 21 - Dominated Convergence Theorem and applications
- Lecture 22 - Lebesgue Integral and its properties
- Lecture 23 - Denseness of continuous function
- Lecture 24 - Product measures, an Introduction
- Lecture 25 - Construction of Product Measure
- Lecture 26 - Computation of Product Measure - I
- Lecture 27 - Computation of Product Measure - II
- Lecture 28 - Integration on Product spaces
- Lecture 29 - Fubini's Theorems

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- Lecture 30 - Lebesgue Measure and integral on \mathbb{R}^2
- Lecture 31 - Properties of Lebesgue Measure and integral on \mathbb{R}^n
- Lecture 32 - Lebesgue integral on \mathbb{R}^2
- Lecture 33 - Integrating complex-valued functions
- Lecture 34 - L_p - spaces
- Lecture 35 - $L^2(X, S, \mu)$
- Lecture 36 - Fundamental Theorem of calculus for Lebesgue Integral - I
- Lecture 37 - Fundamental Theorem of calculus for Lebesgue Integral - II
- Lecture 38 - Absolutely continuous measures
- Lecture 39 - Modes of convergence
- Lecture 40 - Convergence in Measure