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

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NPTEL Video Course - Mathematics - NOC: Measure and Integration
Subject Co-ordinator - Prof. S. Kesavan
Co-ordinating Institute - IIT - Madras
Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable
Lecture 1 - Preamble
Lecture 2 - Algebras of sets
Lecture 3 - Measures on rings
Lecture 4 - Outer-measure
Lecture 5 - Measurable sets
Lecture 6 - Caratheodory's method
Lecture 7 - Exercises
Lecture 8 - Exercises
Lecture 9 - Lebesque measure: the ring
Lecture 10 - Construction of the Lebesque measure
Lecture 11 - Errata
Lecture 12 - The Cantor set
Lecture 13 - Approximation
Lecture 14 - Approximation
Lecture 15 - Approximation
Lecture 16 - Translation Invariance
Lecture 17 - Non-measurable sets
Lecture 18 - Exercises
Lecture 19 - Measurable functions
Lecture 20 - Measurable functions
Lecture 21 - The Cantor function
Lecture 22 - Exercises
Lecture 23 - Egorov's theorem
Lecture 24 - Convergence in measure
Lecture 25 - Convergence in measure
Lecture 26 - Convergence in measure
Lecture 27 - Exercises
Lecture 28 - Integration: Simple functions
Lecture 29 - Non-negative functions
```

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Lecture 30 - Monotone convergence theorem
Lecture 31 - Examples
Lecture 32 - Fatou's lemma
Lecture 33 - Integrable functions
Lecture 34 - Dominated convergence theorem
Lecture 35 - Dominated convergence theorem: Applications
Lecture 36 - Absolute continuity
Lecture 37 - Integration on the real line
Lecture 38 - Examples
Lecture 39 - Weierstrass' theorem
Lecture 40 - Exercises
Lecture 41 - Exercises
Lecture 42 - Vitali covering lemma
Lecture 43 - Monotonic functions
Lecture 44 - Functions of bounded variation
Lecture 45 - Functions of bounded variation
Lecture 46 - Functions of bounded variation
Lecture 47 - Differentiation of an indefinite integral
Lecture 48 - Absolute continuity
Lecture 49 - Exercises
Lecture 50 - Product spaces
Lecture 51 - Product spaces: measurable functions
Lecture 52 - Product measure
Lecture 53 - Fubini's theorem
Lecture 54 - Examples
Lecture 55 - Examples
Lecture 56 - Integration of radial functions
Lecture 57 - Measure of the unit ball in N dimensions
Lecture 58 - Exercises
Lecture 59 - Signed measures
Lecture 60 - Hahn and Jordan decompositions
Lecture 61 - Upper, lower and totaal variations of a signed measure; Absolute continuity
Lecture 62 - Absolute continuity
Lecture 63 - Radon-Nikodym theorem
Lecture 64 - Radon-Nikodym theorem
Lecture 65 - Exercises
Lecture 66 - Lebesgue spaces
Lecture 67 - Examples. Inclusion questions
Lecture 68 - Convergence in L^p
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## NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

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Lecture 69 - Approximation
Lecture 70 - Applications
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Lecture 71 - Duality Lecture 72 - Duality

Lecture 73 - Convolutions Lecture 74 - Convolutions Lecture 75 - Convolutions Lecture 76 - Exercises

Lecture 77 - Exercises

Lecture 78 - Change of variable Lecture 79 - Change of variable