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	Soggetti	Measure theory Mathematical analysis Analysis (Mathematics) Probabilities Measure and Integration Analysis Probability Theory and Stochastic Processes
	Lingua di pubblicazione	Inglese
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	Livello bibliografico	Monografia
	Note generali	Includes indexes.
	Nota di contenuto	1. Measures -- Algebras and sigma-algebras -- Measures -- Outer measures -- Lebesgue measure -- Completeness and regularity -- Dynkin classes -- 2. Functions and Integrals -- Measurable functions -- Properties that hold almost everywhere -- The integral -- Limit theorems -- The Riemann integral -- Measurable functions again, complex-valued functions, and image measures -- 3. Convergence -- Modes of Convergence -- Normed spaces -- Definition of L^p and L^p -- Properties of L^p and L-p -- Dual spaces -- 4. Signed and Complex Measures -- Signed and complex measures -- Absolute continuity -- Singularity -- Functions of bounded variation -- The duals of the L^p spaces -- 5. Product Measures -- Constructions -- Fubini's theorem -- Applications -- 6. Differentiation -- Change of variable in R^d -- Differentiation of measures -- Differentiation of functions -- 7. Measures on Locally Compact Spaces -- Locally compact spaces -- The Riesz representation theorem -- Signed and complex measures; duality -- Additional properties of regular measures -- The μ^*-measurable sets and the dual of L^1 -- Products of locally compact spaces -- 8.

Polish Spaces and Analytic Sets -- Polish spaces -- Analytic sets -- The separation theorem and its consequences -- The measurability of analytic sets -- Cross sections -- Standard, analytic, Lusin, and Souslin spaces -- 9. Haar Measure -- Topological groups -- The existence and uniqueness of Haar measure -- The algebras $L^1(G)$ and $M(G)$ -- Appendices -- A. Notation and set theory -- B. Algebra -- C. Calculus and topology in R^d -- D. Topological spaces and metric spaces -- E. The Bochner integral -- F Liftings -- G The Banach-Tarski paradox -- H The Henstock-Kurzweil and McShane integralsBibliography -- Index of notation -- Index.

Sommario/riassunto	Intended as a self-contained introduction to measure theory, this textbook also includes a comprehensive treatment of integration on locally compact Hausdorff spaces, the analytic and Borel subsets of Polish spaces, and Haar measures on locally compact groups. This second edition includes a chapter on measure-theoretic probability theory, plus brief treatments of the Banach-Tarski paradox, the Henstock-Kurzweil integral, the Daniell integral, and the existence of liftings. Measure Theory provides a solid background for study in both functional analysis and probability theory and is an excellent resource for advanced undergraduate and graduate students in mathematics. The prerequisites for this book are basic courses in point-set topology and in analysis, and the appendices present a thorough review of essential background material. The author aims to present a straightforward treatment of the part of measure theory necessary for analysis and probability' assuming only basic knowledge of analysis and topology...Each chapter includes numerous well-chosen exercises, varying from very routine practice problems to important extensions and developments of the theory; for the difficult ones there are helpful hints. It is the reviewer's opinion that the author has succeeded in his aim. In spite of its lack of new results, the selection and presentation of materials makes this a useful book for an introduction to measure and integration theory. —Mathematical Reviews (Review of the First Edition) The book is a comprehensive and clearly written textbook on measure and integration...The book contains appendices on set theory, algebra, calculus and topology in Euclidean spaces, topological and metric spaces, and the Bochner integral. Each section of the book contains a number of exercises. —zbMATH (Review of the First Edition).