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Nota di contenuto	1 Basic Measure Theory -- 2 Independence -- 3 Generating Functions -- 4 The Integral -- 5 Moments and Laws of Large Numbers -- 6 Convergence Theorems -- 7 Lp-Spaces and the Radon–Nikodym Theorem -- 8 Conditional Expectations -- 9 Martingales -- 10 Optional Sampling Theorems -- 11 Martingale Convergence Theorems and Their Applications -- 12 Backwards Martingales and Exchangeability -- 13 Convergence of Measures -- 14 Probability Measures on Product Spaces -- 15 Characteristic Functions and the Central Limit Theorem -- 16 Infinitely Divisible Distributions -- 17 Markov Chains -- 18 Convergence of Markov Chains -- 19 Markov Chains and Electrical Networks -- 20 Ergodic Theory -- 21 Brownian Motion -- 22 Law of the Iterated Logarithm -- 23 Large Deviations -- 24 The Poisson Point Process -- 25 The Itô Integral -- 26 Stochastic Differential Equations -- References -- Notation Index -- Name Index -- Subject Index.
Sommario/riassunto	This popular textbook, now in a revised and expanded third edition, presents a comprehensive course in modern probability theory. Probability plays an increasingly important role not only in mathematics, but also in physics, biology, finance and computer science, helping to understand phenomena such as magnetism, genetic diversity and market volatility, and also to construct efficient

algorithms. Starting with the very basics, this textbook covers a wide variety of topics in probability, including many not usually found in introductory books, such as: limit theorems for sums of random variables martingales percolation Markov chains and electrical networks construction of stochastic processes Poisson point process and infinite divisibility large deviation principles and statistical physics Brownian motion stochastic integrals and stochastic differential equations. The presentation is self-contained and mathematically rigorous, with the material on probability theory interspersed with chapters on measure theory to better illustrate the power of abstract concepts. This third edition has been carefully extended and includes new features, such as concise summaries at the end of each section and additional questions to encourage self-reflection, as well as updates to the figures and computer simulations. With a wealth of examples and more than 290 exercises, as well as biographical details of key mathematicians, it will be of use to students and researchers in mathematics, statistics, physics, computer science, economics and biology.