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Titolo	Introduction to Stochastic Calculus / / by Rajeeva L. Karandikar, B. V. Rao
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ISBN	9789811083181 9811083185
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Descrizione fisica	1 online resource (XIII, 441 p.)
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Nota di contenuto	Discrete Parameter Martingales -- Continuous Time Processes -- The Ito Integral -- Stochastic Integration -- Semimartingales -- Pathwise Formula for the Stochastic Integral -- Continuous Semimartingales -- Predictable Increasing Processes -- The Davis Inequality -- Integral Representation of Martingales -- Dominating Process of a Semimartingale -- SDE driven by r.c.l.l. Semimartingales -- Girsanov Theorem.
Sommario/riassunto	This book sheds new light on stochastic calculus, the branch of mathematics that is most widely applied in financial engineering and mathematical finance. The first book to introduce pathwise formulae for the stochastic integral, it provides a simple but rigorous treatment of the subject, including a range of advanced topics. The book discusses in-depth topics such as quadratic variation, Ito formula, and Emery topology. The authors briefly address continuous semi-martingales to obtain growth estimates and study solution of a stochastic differential equation (SDE) by using the technique of random time change. Later, by using Metivier–Pellaumail inequality, the solutions to SDEs driven by general semi-martingales are discussed. The connection of the theory with mathematical finance is briefly

discussed and the book has extensive treatment on the representation of martingales as stochastic integrals and a second fundamental theorem of asset pricing. Intended for undergraduate- and beginning graduate-level students in the engineering and mathematics disciplines, the book is also an excellent reference resource for applied mathematicians and statisticians looking for a review of the topic.