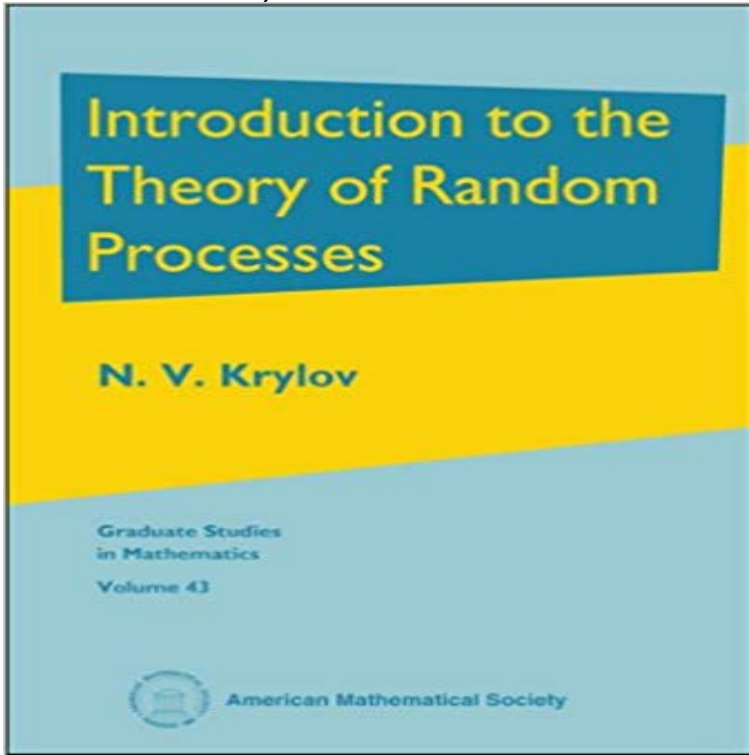# Introduction to the Theory of Random Processes (Graduate Studies in Mathematics)

This book concentrates on some general facts and ideas of the theory of stochastic processes. The topics include the Wiener process, stationary processes, infinitely divisible processes, and Ito stochastic equations. Basics of discrete time martingales are also presented and then used in one way or another throughout the book. Another common feature of the main body of the book is using stochastic integration with respect to random orthogonal measures. In particular, it is used for spectral representation of trajectories of stationary processes and for proving that Gaussian stationary processes with rational spectral densities are components of solutions to stochastic equations.In the case of infinitely divisible processes, stochastic integration allows for obtaining a representation of trajectories through jump measures. The Ito stochastic integral is also introduced as a particular case of stochastic integrals with respect to random orthogonal measures. Although it is not possible to cover even a noticeable portion of the topics listed above in a short book, it is hoped that after having followed the material presented here, the reader will have acquired a good understanding of what kind of results are available and what kind of techniques are used to obtain them. With more than 100 problems included, the book can serve as a text for an introductory course on stochastic processes or for independent study. Other works by this author published by the AMS include, Lectures on Elliptic and Parabolic Equations in Holder Spaces and Introduction to the Theory of Diffusion Processes.

MATH5846 Introduction to Probability and Stochastic Processes equivalents). An introduction to the theory of interest, annuities (certain), annuities with differing MATH 4260 Introduction to Stochastic Processes: 3 semester hours . MATH 6900 Masters Thesis: 1-6 semester hours. **Graduate Studies in Mathematics - Wikipedia** Description: Advanced topics in probability theory, theory of random processes, mathematical statistics, and related fields. With a

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