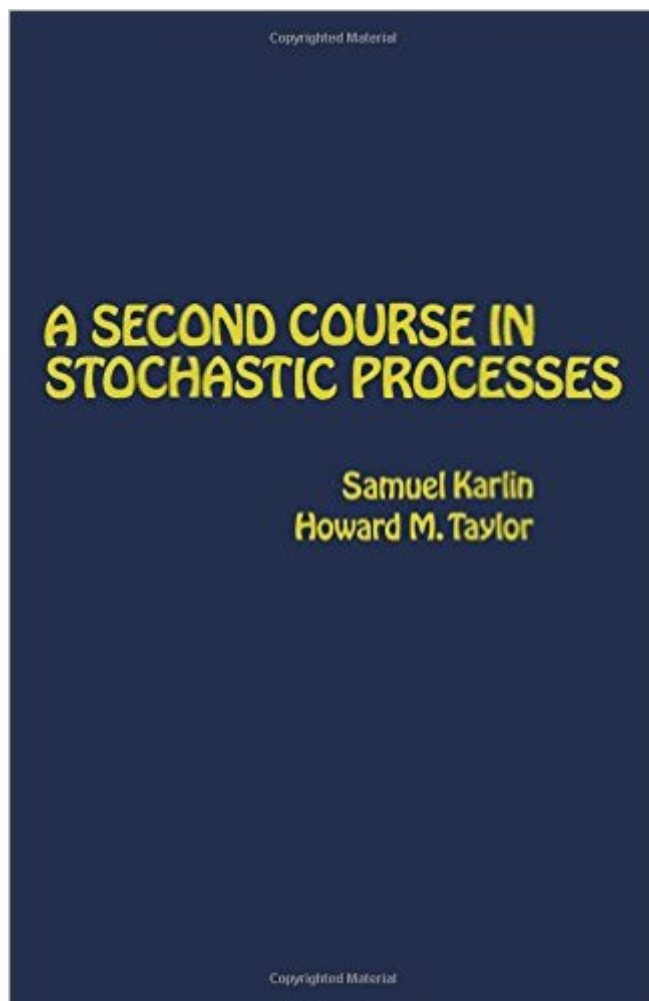


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A Second Course In Stochastic Processes



Synopsis

This Second Course continues the development of the theory and applications of stochastic processes as promised in the preface of A First Course. We emphasize a careful treatment of basic structures in stochastic processes in symbiosis with the analysis of natural classes of stochastic processes arising from the biological, physical, and social sciences.

Book Information

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Customer Reviews

Karlin and Taylor wrote a classic text on stochastic processes in their "A First Course in Stochastic Processes". The second edition of that text was published in 1975. This sequel came out in 1981. It is not only a second course but it is also intended as a second volume on a larger course in stochastic processes. The authors show that they are continuing from the first course by picking up with Chapter 10 after the first book ended with Chapter 9. Many of the topics in the first book are continued in this text including Markov chains and Diffusions. Heavy emphasis is placed on point processes and their applications including Poisson and compound Poisson processes, population growth models and queueing processes.

In financial derivatives, people are generally dealing with all kinds of stochastic processes. This second course focuses on diffusion processes and prepares one with adequate knowledge to go ahead and understand how options are priced. This book itself does not touch any financial theory and will be of great use to people in genetics, mathematics and physics alike (finance also, of

course). The authors give a chart of logical dependence of all the chapters so you do not need to read every single corner if you are only interested in a specific topic. Readers are assumed to know Calculus and some basic probability theory. Knowledge of Brownian motion is not required and the authors succeeded in keeping the math accessible. Although a mature senior might undertake this book, math in this book is not sloppy at all. Another thing I liked this book very much is there are so many exercises at the end of each chapter and one can check if he understands the materials or not. It's quite fair to give this book five stars.

You know who your real friends are when they recommend you this book. This gem gives you a real appreciation for what is, unfortunately, the "old" - style of mathematics. Unlike the disastrous expositions in certain modern texts that will remain nameless - this text motivates all its topics with ample examples and doesn't beat you over the head with notation, jargon and arrogance. The topics are appropriate for a first course and for people that want to apply the material to their work or research right away.

This review is for both the First and Second Courses by Karlin & Taylor. This is an absolute classic. Full stop. Despite giving a real tour de force in stochastic processes, Karling & Taylor manage to maintain a surprisingly readable and relaxed style. The ease at which this text is delivered is almost disarming - there is real wizardry on show here, but it is presented with no excess or arrogance. The chapter on diffusions, and in particular boundary classification, is a highlight. What I found interesting is that the mathematical maturity required of the reader is high, but the actual technical prerequisites are surprisingly low. This is quite an achievement. For those coming from the natural sciences, I believe this text fits in nicely after say Van Kampen, or Gardiner. I found it very useful as a complement to books like these where I needed more detail on a specific area - it would be a huge undertaking to actually get through both courses.

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