Introduction to Stochastic Processes with R
Robert P. Dobrow

E-Book	978-1-118-74070-5	March 2016	$104.99
Hardcover	978-1-118-74065-1	March 2016	$130.00
O-Book	978-1-118-74071-2	March 2016	Available on Wiley Online Library

DESCRIPTION

An introduction to stochastic processes through the use of R

Introduction to Stochastic Processes with R is an accessible and well-balanced presentation of the theory of stochastic processes, with an emphasis on real-world applications of probability theory in the natural and social sciences. The use of simulation, by means of the popular statistical software R, makes theoretical results come alive with practical, hands-on demonstrations.

Written by a highly-qualified expert in the field, the author presents numerous examples from a wide array of disciplines, which are used to illustrate concepts and highlight computational and theoretical results. Developing readers' problem-solving skills and mathematical maturity, *Introduction to Stochastic Processes with R* features:

• More than 200 examples and 600 end-of-chapter exercises

• A tutorial for getting started with R, and appendices that contain review material in probability and matrix algebra

• Discussions of many timely and stimulating topics including Markov chain Monte Carlo, random walk on graphs, card shuffling, Black–Scholes options pricing, applications in biology and genetics, cryptography, martingales, and stochastic calculus

• Introductions to mathematics as needed in order to suit readers at many mathematical levels

• A companion web site that includes relevant data files as well as all R code and scripts used throughout the book

Introduction to Stochastic Processes with R is an ideal textbook for an introductory course in stochastic processes. The book is aimed at undergraduate and beginning graduate-level students in the science, technology, engineering, and mathematics disciplines. The book is also an excellent reference for applied mathematicians and statisticians who are interested in a review of the topic.

ABOUT THE AUTHOR

Robert P. Dobrow, PhD, is Professor of Mathematics and Statistics at Carleton College. He has taught probability and stochastic processes for over 15 years and has authored numerous research papers in Markov chains, probability theory and statistics.

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