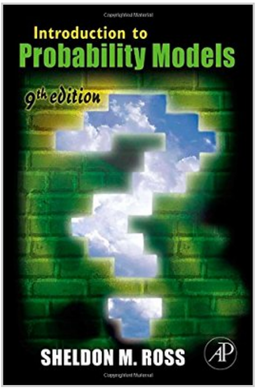


# Introduction to Probability Models, Ninth Edition

*By Sheldon M. Ross*



**Introduction to Probability Models, Ninth Edition** By Sheldon M. Ross

*Introduction to Probability Models, Ninth Edition,* is the primary text for a first undergraduate course in applied probability. This updated edition of Ross's classic bestseller provides an introduction to elementary probability theory and stochastic processes, and shows how probability theory can be applied to the study of phenomena in fields such as engineering, computer science, management science, the physical and social sciences, and operations research. With the addition of several new sections relating to actuaries, this text is highly recommended by the Society of Actuaries.

This book now contains a new section on compound random variables that can be used to establish a recursive formula for computing probability mass functions for a variety of common compounding distributions; a new section on hiddden Markov chains, including the forward and backward approaches for computing the joint probability mass function of the signals, as well as the Viterbi algorithm for determining the most likely sequence of states; and a simplified approach for analyzing nonhomogeneous Poisson processes. There are also additional results on queues relating to the conditional distribution of the number found by an M/M/1 arrival who spends a time t in the system; inspection paradox for M/M/1 queues; and M/G/1 queue with server breakdown. Furthermore, the book includes new examples and exercises, along with compulsory material for new Exam 3 of the Society of Actuaries.

This book is essential reading for professionals and students in actuarial science, engineering, operations research, and other fields in applied probability.

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Simplified Approach for Analyzing Nonhomogeneous Poisson processes

Additional results on queues relating to the
(a) conditional distribution of the number found by an M/M/1 arrival who spends a time t in the system,;
(b) inspection paradox for M/M/1 queues
(c) M/G/1 queue with server breakdown

Many new examples and exercises.

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Review
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About the Author
Sheldon M. Ross is a professor in the Department of Industrial Engineering and Operations Research at the University of Southern California. He received his Ph.D. in statistics at Stanford University in 1968. He has published many technical articles and textbooks in the areas of statistics and applied probability. Among his texts are A First Course in Probability, Introduction to Probability Models, Stochastic Processes, and Introductory Statistics. Professor Ross is the founding and continuing editor of the journal *Probability in the Engineering and Informational Sciences*. He is a Fellow of the Institute of Mathematical Statistics, and a recipient of the Humboldt US Senior Scientist Award.

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