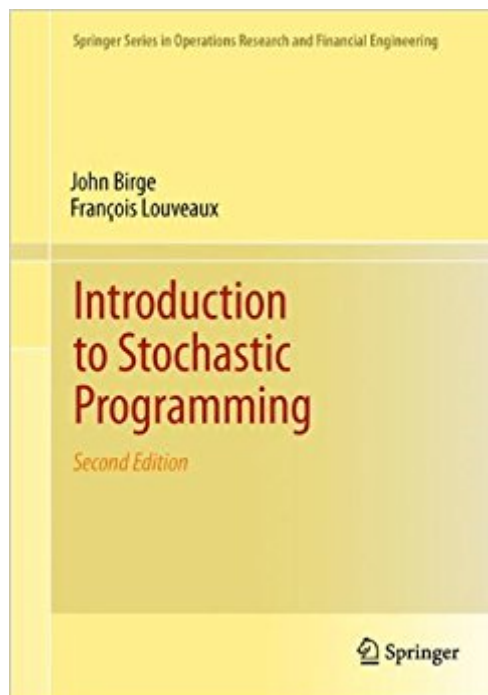# Introduction To Stochastic Programming (Springer Series In Operations Research And Financial Engineering)

Synopsis

The aim of stochastic programming is to find optimal decisions in problemsÂ which involve uncertain data. This field is currently developing rapidly with contributions from many disciplines including operations research, mathematics, and probability. At the same time, it is now being applied in a wide variety of subjects ranging from agriculture to financial planning and from industrial engineering to computer networks. This textbook provides a first course in stochastic programming suitable for students with a basic knowledge of linear programming, elementary analysis, and probability. The authors aim to present a broad overview of the main themes and methods of the subject. Its prime goal is to help students develop an intuition on how to model uncertainty into mathematical problems, what uncertainty changes bring to the decision process, and what techniques help to manage uncertainty in solving the problems.In this extensively updated new edition there is more material on methods and examples including several new approaches for discrete variables, new results on risk measures in modeling and Monte Carlo sampling methods, a new chapter on relationships to other methods including approximate dynamic programming, robust optimization and online methods.The book is highly illustrated with chapter summaries and many examples and exercises. Students, researchers and practitioners in operations research and the optimization area will find it particularly of interest. Review of First Edition:"The discussion on modeling issues, the large number of examples used to illustrate the material, and the breadth of the coverage makeÂ 'Introduction to Stochastic Programming' an ideal textbook for the area." (Interfaces, 1998)

Book Information

Average Customer Review: 3.2 out of 5 starsÂ Â See all reviewsÂ (4 customer reviews)

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Customer Reviews

Given that there are not many books in the area of stochastic programming Birge et al have written a book that will be a necessary reference for the time being. The first third of the book does provide a good introduction to the basics of SP but after that a level of formalism dominates that makes one wonder if she is reading from an arcane optimization journal. The later two thirds of the book is really nothing more than an amalgam of results pulled from the literature (journals). As such, little motivation is provided for the major results that are for the most part just juxtaposed on after another. One wonders why such a journalistic style would be used for an introductory text. After all the subject should not be presented as a springer-verlag MATH text in a field like algebraic topology where a theorem-proof format is legimate. Thus, until a better introductory text comes along that blends more of the practical engineering aspects with the theory we must be content with the current state of the art.

Introduction to Stochastic Programming is a must own book for anyone working in OR, IE, MS, etc. As stochasticity becomes more and more important in the field, this book becomes increasingly valuable. "Introduction" is a bit of a stretch. It starts from ground zero of Stochastic Programming, but is very heavy on the math. If you aren't solid with your LP and probability, then a brush up is definately in order. This book is not for the faint of heart. Nevertheless, Birge and Louveaux do an OUTSTANDING job. The examples are clear, easy to follow (assuming you're not math phobic) and very relevant. They go through different formulations of stochastic programms (recourse, chance constrained, etc.). The book discusses formulation, algorithms, and applications. There are not many books out there on Stochastic Programming...and this is really the only one you need to own.

Typical Spinger book. Way too much text and too little illustration or examples. Meh....They really should bring their textbooks into the 21st century with color, illustrations, pictures, and even more digital tie-in. This is dry as cardboard, and math doesn't have to be like that.

The author is certainly well recognized in the field. However, I found the book a bit difficult to read. I felt the author could have described things in greater detail and depth. That is, he seemingly left a lot for the reader to infer and derive for himself.

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