

RESEÑAS / BOOK REVIEWS

A first course in combinatorial optimization

J. Lee (2004)

Cambridge University Text

Cambridge Texts in Applied Mathematics Series

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XVI+211

The book has 9 chapters. The first, numbered 0 is devoted to the presentation of linear programming where the simplex, the ellipsoid and interior point methods is the content. It provides basic knowledge on the theme. It can be no use in a course for Operations researchers. Chapter 1 permits to obtain knowledge on matroids and greedy algorithms. It, as well, provides an idea on the basics of polyhedral combinatorics and of the most used algorithms for calculating minimum weight dipaths. Chapter 3 is concerned with the challenges posed by the need of obtaining maximum cardinality and maximum weight sets, which are independent in two matroids on a common ground set. The following chapter may be used for delivering a good lecture on matching graphs while chapter 5 plays a similar role for the non-initiated, and as a reference source for initiated, on the maximum flow problem for digraph and cut problems. The chapter 6 deals with the cutting planes method for integer programming, developing an illustrating discussion on tightening formulation. Then the seventh chapter intends that the readers be aware of the possibilities of Branch & Bound methods and how the mathematical problem of solving combinatorial optimization problems are solved using it. Finally chapter 8 discuss the optimization modular functions problems.

The readers of this book will obtain also the know-how of the modeling problems arising in integer programming and which models should be in their bag. A larger percent of the chapters includes references on the available computer supports for the practical day-to-day work. Each chapter closes with a recommendation for further readings. An appendix provides the basic notation used in the book. A list of exercises is given.

I recommend it for mathematicians and engineers that have the responsibility of teaching on the subject.

Sovandep.H. Kumar

Institute of Computer Engineering and Business Management

Optiosbewertung und portfolio Optimierung.

Ralf und Elke Korn (2001)

BertelsmannSpringer, ISBN 3-528-16982-6

XIV+294

This is a valuable book for every body involved in courses on finance mathematics. It poses an emphasis in the mathematics involved with the financial business and points of view. Being written in German makes it less usable than other books in the market This is an approach that seems to be good for fitting the minds of the students within the abstracts formulations, of real world problems arising in finances. The author describes several important real-economy problems in top business firms. It is pointed out the importance of merging theoretical thinking with the usual management problematic.

The book has 5 chapters conceived for a one-semester course in the subject for mathematicians going into economics or advanced economic students.. The first chapter presents the basic problems of Markowitz models which is discussed at large using the modern formulation. The second chapter deals with theoretical models using Brownian motion, martingales, Ito integrals and so on. Chapter 3 is devoted to the study of option prices problems discussing the different variants of them , the mathematical models and the principles. It is followed by a chapter where a similar discussion is developed for exotic options. The last chapter is devoted to the derivation of optimal portfolios. A small set of exercises are proposed at the end of the chapters.

J. Scheneweiss
BRUQUE Consultors