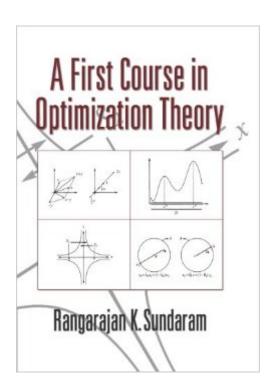
The book was found

A First Course In Optimization Theory





Synopsis

This book introduces students to optimization theory and its use in economics and allied disciplines. The first of its three parts examines the existence of solutions to optimization problems in Rn, and how these solutions may be identified. The second part explores how solutions to optimization problems change with changes in the underlying parameters, and the last part provides an extensive description of the fundamental principles of finite- and infinite-horizon dynamic programming. A preliminary chapter and three appendices are designed to keep the book mathematically self-contained.

Book Information

Paperback: 376 pages

Publisher: Cambridge University Press; 130.65 edition edition (June 13, 1996)

Language: English

ISBN-10: 0521497701

ISBN-13: 978-0521497701

Product Dimensions: 6 x 0.8 x 9 inches

Shipping Weight: 1.8 pounds (View shipping rates and policies)

Average Customer Review: 4.2 out of 5 stars Â See all reviews (21 customer reviews)

Best Sellers Rank: #262,791 in Books (See Top 100 in Books) #29 in Books > Science & Math >

Mathematics > Applied > Linear Programming #57 in Books > Science & Math > Evolution >

Game Theory #87 in Books > Textbooks > Business & Finance > Economics > Economic Theory

Customer Reviews

This book gives a nice introduction to the theory of optimization from a purely mathematical standpoint. The computational and algorithmic aspects of the subject are not treated, with emphasis instead placed on existencetheorems for various optimization problems. The author does an effective job of detailing the mathematical formalism needed in optimization theory. After a brief review of background mathematics in the first chapter, the author outlines the objectives of optimization theory in Chapter Two. He also gives some examples of optimization problems, such as utility maximization, expenditure minimization, profit maximization, cost minimization, and portfolio choice. All of these examples are extremely important in industrial, logistical, and financial applications. The author is also careful in this chapter to outline his intentions in later chapters, namely, that of finding the existence of solutions to optimization problems, and also in the characterization of the set of optimal points. The existence question is outlined in Chapter Three

using only elementary calculus, and the Weierstrass theorem is proved. Necessary conditions for unconstrained optima are examined in the next chapter, again using only elementary calculus and linear algebra. Lagrange multipliers and how they are used in constrained optimization problems are effectively discussed in Chapter 5. To discuss how optimization problems vary with a set of parameters, in particular if they vary continuously with the set of parameters, the author introduces the concept of a corespondence. This is essentially a map that assigns sets to points. His discussion of upper and lower-semicontinuity is very clear and I think one of the best presentations given at this level.

This book mostly has clearly written proofs and easy-to-follow explanations for students who have some experience in proofs or basic analysis. In my opinion, it is definitely not a book for someone who has only seen calculus. However, I have three very large problems with this book. The first, and most important, is that the book is not self contained. In many theorems in Chapter 1, the reader is asked to see Baby Rudin for the proof. While it's pretty easy to find a PDF of Baby Rudin online for free, this is still not ideal. First, because Rudin and this book use different terminology/symbols for the same concepts, so there is a bit of unnecessary complexity in figuring how out Rudin's proof fits into this book's theorem. For example, the proof of Theorem 1.21 in this book is left to the proof of Rudin's Theorem 2.41. However, Rudin relies on the concept of k-cells, which this book never speaks of. Second, and most importantly, Rudin's proofs rely on concepts that this book has not defined. For example, Theorem 1.28 in this book relies on the proof of Theorem 2.36 in Baby Rudin. However, the proof in Baby Rudin relies on the concept of an "open cover," which this book does not define until a couple theorems later! The second complaint I have about this book is that sometimes the proofs are sloppy. For example, at the beginning of section 1.2.8, the author states that unbounded sets must be compact and states that an unbounded sequence cannot contain a convergent subsequence. Instead of explaining why, though, he simply puts "(why?)" in the text. While this might be great for a student who is following this book in a class or with an instructor, this is incredibly frustrating for someone who is studying on their own.

Download to continue reading...

A First Course in Optimization Theory Python: PYTHON CRASH COURSE - Beginner's Course To Learn The Basics Of Python Programming In 24 Hours!: (Python, Python Programming, Python for Dummies, Python for Beginners, python crash course) IB Theory of Knowledge Course Book: Oxford IB Diploma Program Course Book Generalized Convexity and Optimization: Theory and Applications (Lecture Notes in Economics and Mathematical Systems) Convex Optimization Theory

Combinatorial Optimization: Theory and Algorithms (Algorithms and Combinatorics) Teach Online: Design Your First Online Course: Step-By-Step Guide To A Course That Gets Results (Volume 3) Classical Piano Solos - First Grade: John Thompson's Modern Course Compiled and edited by Philip Low, Sonya Schumann & Charmaine Siagian (John Thompson's Modern Course for the Piano) SEO: How to Get On the First Page of Google (Google Analytics, Website Traffic, Adwords, Pay per Click, Website Promotion, Search Engine Optimization) (Seo Bible Book 1) A First Course In Chaotic Dynamical Systems: Theory And Experiment (Studies in Nonlinearity) A First Course in Graph Theory (Dover Books on Mathematics) Set Theory: A First Course (Cambridge Mathematical Textbooks) My Very First First-Aid Book: A Simple Guide to First Aid for Younger Children First Grade Us History: The First Americans: First Grade Books (Children's American History Books) Three came with gifts: The story of the first hospital, the first school and the first cloister in Canada and their heroic founders SQL: Learn SQL In A DAY! - The Ultimate Crash Course to Learning the Basics of SQL In No Time (SQL, SQL Course, SQL Development, SQL Books, SQL for Beginners) C: Learn C In A DAY! - The Ultimate Crash Course to Learning the Basics of C In No Time (C, C Course, C Development, C Books, C for Beginners) Crochet: Crash Course - The Ultimate Beginner's Course to Learning How to Crochet In Under 12 Hours - Including Quick Projects & Detailed Images Windows on the World Complete Wine Course: 25th Anniversary Edition (Kevin Zraly's Complete Wine Course) IOS: Crash Course - The Ultimate Beginner's Course to Learning IOS Programming in Under 12 Hours

<u>Dmca</u>