Introduction to Linear Programming and the Theory of Games

Filling the need for an introductory book on linear programming that discusses the important ways to mitigate parameter uncertainty, Introduction to Linear Optimization and Extensions with MATLAB provides a concrete and relatively yet rigorous introduction to modern linear optimization. In addition to fundamental topics, the book discusses current applications of linear programming and game theory.

Introduction to Linear Optimization


Non-Linear Programming

A self-contained introduction to linear programming using MATLAB® software to elucidate the development of algorithms and theory. Exercises are included in each chapter, and additional information is provided in two appendixes that accompany the Web site. Only a basic knowledge of linear algebra and calculus is required.

An Introduction to Linear Programming

Linear Programming and Resource Allocation Modeling

The book is an introductory textbook mainly for students of computer science and mathematics. Our guiding thesis is what every theoretical computer scientist should know about linear programming. A major focus is on applications of linear programming, both in practice and in theory. The book is concise, but at the same time, the main results are covered with complete proofs and in sufficient detail, ready for presentation in class. The book does not require more prerequisites than basic linear algebra, which is summarized in an appendix. One of its main goals is to help the reader to see linear programming "behind the scenes".

An Introduction to Linear Programming

Linear Programming provides an in-depth look at simplex based as well as the more recent interior point techniques for solving linear programming problems. Starting with a review of the mathematical underpinnings of these approaches, the text provides details of the primal and dual simplex methods with the primal-dual, composite, and simplest edge simplex algorithms. This then is followed by a discussion of interior point techniques, including primal and dual affine potential reduction, primal and dual affine scaling, and path following algorithms. Also covered is the theory and solution of the linear complementarity problem using both the complementary pivot algorithm and interior point routines. A feature of the book is its early and extensive development and use of duality theory. Audience: The book is written for students in the areas of mathematics, economics, engineering and management science, and professionals who need a sound foundation in the important and dynamic discipline of linear programming.

Theory of Linear and Integer Programming


An Introduction to Linear Programming

This Fourth Edition introduces the latest theory and applications in optimization. It emphasizes constrained optimization, beginning with a substantial treatment of linear programming and then proceeding to convex analysis, network flows, integer programming, quadratic programming, and convex optimization. Readers will discover a host of practical business applications as well as non-business applications. Topics are clearly developed with many numerical examples and exercises that range from routine to challenging. Specific examples, mostly from operations research and management science, are used to illustrate various pivot rules and variants of the simplex method. This book is designed for a one-semester undergraduate course. Readers will need a degree of mathematical maturity, as well as a willingness to commit time and effort to the pursuit of understanding the material.

Introduction to Linear Programming

This introductory textbook is aimed at undergraduate students of computer science and mathematics. Our guiding principle is what every theoretical computer scientist should know about linear programming. A major focus is on applications of linear programming, both in practice and in theory. The book is concise, but at the same time, the main results are covered with complete proofs and in sufficient detail, ready for presentation in class. The book does not require more prerequisites than basic linear algebra, which is summarized in an appendix. One of its main goals is to help the reader to see linear programming "behind the scenes".

Introduction to Linear Programming

Linear Programming and the Theory of Games

This is quite a well-done book: very tightly organized, better-than-average exposition, and numerous examples, illustrations, and applications. Mathematical Reviews of the American Mathematical Society. An Introduction to Linear Programming and Game Theory. Third Edition presents a rigorous, yet accessible, introduction to the theoretical concepts and computational techniques of linear programming and game theory. New with this edition are new modeling vignettes and expanded applications. This book contains a complete development of all presented concepts and examples, introduction to Linear Programming and Game Theory, Third Edition is an ideal text for linear programming and mathematical modeling courses at the undergraduate and graduate level. It also serves as an excellent resource for professionals who use game theory in business, economics, and management science.

Understanding and Using Linear Programming

An Introduction to Linear Programming

This introduction to optimization emphasizes the need for both a pure and an applied mathematical point of view. Beginning with a chapter on linear algebra and Euclidean geometry, the author then applies this theory with an introduction to linear programming. There follows a discussion of convex analysis, which finds application in non-linear programming. The book ends with an extensive commentary to the exercises that are given at the end of each chapter. The author's straightforward, geometrical approach makes this an attractive textbook for undergraduate students of mathematics, engineering, operations research and economics.
or economics course. Provides a complete treatment of linear programming as applied to activity selection and usage. Contains many detailed example problems as well as textual and graphical explanations. Linear Programming and Resource Allocation Modeling is an excellent resource for professionals looking to solve linear optimization problems, and advanced undergraduate to beginning graduate level management science or economics students.

Linear Programming

Stressing the use of several software packages based on simplex method variations, this text teaches linear programming's four phases through actual practice. It shows how to decide whether LP models should be applied, set up appropriate models, use software to solve them, and examine solutions to a

An Introduction to Optimization

Encompassing all the major topics students will encounter in courses on the subject, the authors teach both the underlying mathematical foundations and how these ideas are implemented in practice. They illustrate all the concepts with both worked examples and plenty of exercises, and, in addition, provide software so that students can try out numerical methods and hone their skills in interpreting the results. As a result, this will make an ideal textbook for all those coming to the subject for the first time. Author's note: A problem recently found with the software is due to a bug in Formula One, the third party commercial software package that was used for the development of the interface. It occurs when the date, currency, etc. format is set to a non-United States version. Please try setting your computer date/currency option to the United States option. The new version of Formula One, when ready, will be posted on the Web.

Mathematical Introduction to Linear Programming and Game Theory

A modern, up-to-date introduction to optimization theory and methods. This authoritative book serves as an introductory text to optimization at the senior undergraduate and beginning graduate levels. With consistently accessible and elementary treatment of all topics, Linear Programming and Game Theory helps students build a solid working knowledge of the field, including unconstrained optimization, linear programming, and constrained optimization. Supplemented with more than one hundred tables and illustrations, an extensive bibliography, and numerous worked examples to illustrate both theory and algorithms, this book also provides:

- A review of the required mathematical background material
- A mathematical discussion at a level accessible to MBA and business students
- A treatment of both linear and nonlinear programming
- An introduction to recent developments, including neural networks, genetic algorithms, and interior-point methods
- MATLAB(r) exercises and examples
- Accompanying Instructor's Solutions Manual available online

An Introduction to Optimization, Second Edition helps students prepare for the advanced topics and technological developments that lie ahead. It is also a useful book for researchers and professionals in mathematics, electrical engineering, economics, statistics, and business. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

Linear Programming

This book is based on the lecture notes of the author delivered to the students at the Institute of Science, Banaras Hindu University, India. It covers simplex, revised simplex, two-phase method, duality, dual simplex, complementary slackness, transportation and assignment problems with good number of examples, clear proofs, MATLAB codes and homework problems. The book will be useful for both students and practitioners.

Linear Programming

Entertaining, nontechnical introduction covers basic concepts of linear programming and its relationship to operations research: geometric interpretation and problem solving, solution techniques, network problems, much more. Only high-school algebra needed.