Record Nr. UNINA9910139566203321 Building and solving mathematical programming models in engineering **Titolo** and science [[electronic resource] /] / Enrique Castillo ... [et al.] Pubbl/distr/stampa New York, : Wiley, 2002 **ISBN** 1-283-33192-6 9786613331922 0-471-22529-0 0-471-46165-2 Descrizione fisica 1 online resource (568 p.) Collana Pure and applied mathematics Altri autori (Persone) CastilloEnrique <1946-> Disciplina 620.0015197 620/.001/5197 Soggetti Programming (Mathematics) Engineering models Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references (p. 533-540) and index. Building and Solving Mathematical Programming Models in Engineering Nota di contenuto and Science; Contents; Preface; I Models; 1 Linear Programming; 1.1 Introduction; 1.2 The Transportation Problem; 1.3 The Production Scheduling Problem; 1.3.1 Production Scheduling Problem 1; 1.4 The Diet Problem; 1.5 The Network Flow Problem; 1.6 The Portfolio Problem; 1.7 Scaffolding System; 1.8 Electric Power Economic Dispatch; Exercises; 2 Mixed-Integer Linear Programming; 2.1 Introduction; 2.2 The 0-1 Knapsack Problem; 2.3 Identifying Relevant Symptoms; 2.4 The Academy Problem: 2.5 School Timetable Problem 2.6 Models of Discrete Location2.7 Unit Commitment of Thermal Power Units; Exercises; 3 Nonlinear Programming; 3.1 Introduction; 3.2 Some Geometrically Motivated Examples; 3.2.1 The Postal Package Example; 3.2.2 The Tent Example; 3.2.3 The Lightbulb Example; 3.2.4 The

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Sommario/riassunto

Fundamental concepts of mathematical modelingModeling is one of the most effective, commonly used tools in engineering and the applied sciences. In this book, the authors deal with mathematical programming models both linear and nonlinear and across a wide range of practical applications. Whereas other books concentrate on standard methods of analysis, the authors focus on the power of modeling methods for solving practical problems-clearly showing the connection between physical and mathematical realities-while also describing and exploring the main concepts and tools at work.