Principles of Sequencing and Scheduling

Description: An up-to-date and comprehensive treatment of the fundamentals of scheduling theory, including recent advances and state-of-the-art topics

Principles of Sequencing and Scheduling strikes a unique balance between theory and practice, providing an accessible introduction to the concepts, methods, and results of scheduling theory and its core topics. With real-world examples and up-to-date modeling techniques, the book equips readers with the basic knowledge needed for understanding scheduling theory and delving into its applications. The authors begin with an introduction and overview of sequencing and scheduling, including single-machine sequencing, optimization and heuristic solution methods, and models with earliness and tardiness penalties. The most current material on stochastic scheduling, including correct scheduling of safety time and the use of simulation for optimization, is then presented and integrated with deterministic models. Additional topical coverage includes:

- Extensions of the basic model
- Parallel-machine models
- Flow shop scheduling
- Scheduling groups of jobs
- The job shop problem
- Simulation models for the dynamic job shop
- Network methods for project scheduling
- Resource-constrained project scheduling
- Stochastic and safe scheduling

Extensive end-of-chapter exercises are provided, some of which are spreadsheet-oriented, and link scheduling theory to the most popular analytic platform among today's students and practitioners—the Microsoft Office Excel® spreadsheet. Extensive references direct readers to additional literature, and the book's related Web site houses material that reinforces the book's concepts, including research notes, data sets, and examples from the text.

Principles of Sequencing and Scheduling is an excellent book for courses on sequencing and scheduling at the upper-undergraduate and graduate levels. It is also a valuable reference for researchers and practitioners in the fields of statistics, computer science, operations research, and engineering.

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