

Solving large-scale production scheduling and planning in the process industries

Kopanos, Georgios M., author

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Abstrak

This book presents a number of efficient techniques for solving large-scale production scheduling and planning problems in process industries. The main content is supplemented by a wealth of illustrations, while case studies on large-scale industrial applications, ranging from continuous to semicontinuous and batch processes, round out the coverage.

The book examines a variety of complex, real-world problems, and demonstrates solutions that are applicable to scenarios and countries around the world. Specifically, these case studies include:

- the production planning of the bottling stage of a major brewery at the Cervecería Cuauhtémoc Moctezuma (Heineken Int) in Mexico;
- the production scheduling for multi-stage semicontinuous processes at an ice-cream production facility of Unilever in the Netherlands;
- the resource-constrained production planning for the yogurt production line at the KRI KRI dairy production facility in Greece; and
- the production scheduling for large-scale, multi-stage batch processes at a pharmaceutical batch plant in Germany.

In addition, the book includes industrial-inspired case studies of:

- the simultaneous planning of production and logistics operations considering multi-site facilities for semicontinuous processes; and
- the integrated planning of production and utility systems in process industries under uncertainty.

Solving Large-scale Production Scheduling and Planning in the Process Industries offers a valuable reference guide for researchers and decision-makers alike, as it shows readers how to evaluate and improve existing installations, and how to design new ones. It is also well suited as a textbook for advanced courses on production scheduling and planning in industry, as it addresses the optimization of production and logistics operations in real-world process industries.