

Review of

“Planning and Scheduling in Manufacturing and Services”, Second Edition,

by Michael L. Pinedo

Springer, Berlin, 2009, 590 pages

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Scheduling problems are all around us. Any fine planning of the production of goods and services requires considering scarce resource and other restrictions and aims at optimising one or several objectives. Despite the hardness of these optimisations problems and vast amount of theoretical results, mostly simple algorithms, often with an uncertain quality of the results, still dominate in practice – frequently also when “advanced planning software” is applied.

Therefore, it is a worthwhile endeavour when an author presents a rather comprehensive monograph on such problems with a clear focus on practical applications. Michael Pinedo is one of the best suited authors for that since he is well-known for his other publications in the area of scheduling, especially his more theoretically focussed book “Scheduling: Theory, Algorithms and Systems” which has meanwhile been published in its 3rd edition (Springer, 2008).

Also the book under review has now been published in its 2nd edition. It covers scheduling problems in various areas of manufacturing and services such as, for instance, project scheduling, classical machine scheduling problems, lot sizing, scheduling problems in supply chains, time-tabling scheduling and routing in transportation, rostering, or scheduling problems in sports and health care. Missing are, for instance, specific scheduling problems in telecommunications and IT systems. Despite the variety of scheduling problems the books (successfully) tries to cover them from a common perspective and with a widely consistent terminology. The chapters are written in a self-contained way such that a reader can focus on selected papers (after reading the introductory part of the book).

Moreover, the book comes with several appendices which cover the following topics: Mathematical programming, exact optimisation methods, heuristic methods, constraint programming, and selected scheduling systems. The book is shipped with a CD-ROM which contains the LEKIN job shop scheduling system, other optimisation software, further examples and exercises, papers for additional reading, slides, and even movies on scheduling. Exercises to the 15 chapters present a good fundament for using the book as teaching material. Additionally, the teaching slides shipped with the CD-ROM facilitate to use the book as a foundation for a scheduling course.

The book is clearly structured and very well-written. I can warmly recommend it to any reader who wants to deepen his or her understanding of scheduling problems with a focus on practical applications. Main focus of the book is surely to use it for a scheduling course. But due to its rather simple terminology and jargon (formulae are kept simple and catchy topics such as results in complexity theory are left out) it can also be used for self-study or by practitioners. However, I suppose that also experts in scheduling can benefit from this book.