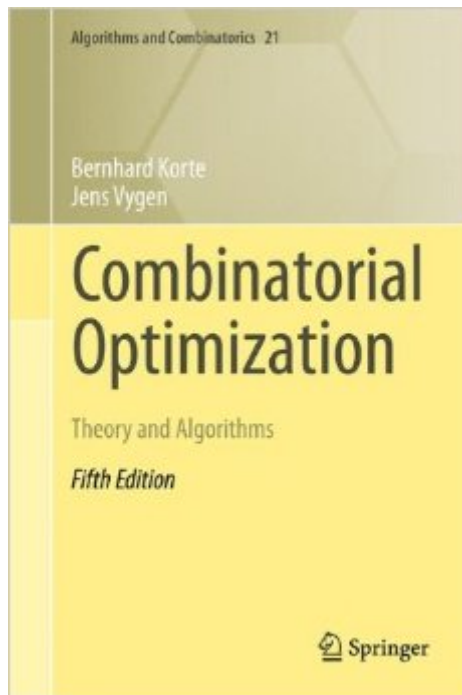


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# Combinatorial Optimization: Theory And Algorithms (Algorithms And Combinatorics)



## Synopsis

This comprehensive textbook on combinatorial optimization places special emphasis on theoretical results and algorithms with provably good performance, in contrast to heuristics. It is based on numerous courses on combinatorial optimization and specialized topics, mostly at graduate level. This book reviews the fundamentals, covers the classical topics (paths, flows, matching, matroids, NP-completeness, approximation algorithms) in detail, and proceeds to advanced and recent topics, some of which have not appeared in a textbook before. Throughout, it contains complete but concise proofs, and also provides numerous exercises and references. This fifth edition has again been updated, revised, and significantly extended, with more than 60 new exercises and new material on various topics, including Cayley's formula, blocking flows, faster b-matching separation, multidimensional knapsack, multicommodity max-flow min-cut ratio, and sparsest cut. Thus, this book represents the state of the art of combinatorial optimization.

## Book Information

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## Customer Reviews

This is the most comprehensive compilation on combinatorial optimization I have seen so far. Usually, Papadimitriou's book is a good place for this material - but in many cases, looking for proofs and theorems - I had to use several books: (\*) Combinatorial Optimization Algorithms and Complexity by Papadimitriou and Steiglitz. (\*) Integer and Combinatorial Optimization by Nemhauser and Wolsey (\*) Theory of linear and integer programming by Schrijver (\*) Combinatorial Optimization

by Cook, Cunningham, Pulleyblank and Schrijver(\*) Combinatorial Algorithms by Kreher and Stinson This book, on the other hand, contains so much information and so many proved theorems - it's the richest resource in this topic, in my humble opinion. Using it as a graduate level textbook for an \*introduction\* to combinatorial optimization is kind of hard - as although it's richness, some topics are described without enough detail or examples (like the topics on network flow and bipartite graphs) - yet the authors probably assumed some previous knowledge in those topics. I prefer using this book as a reference rather than an introduction. The heavy mathematical notations in this book might scare some readers, but no-fear! You quickly get used to it, and appreciate the greatness in the notations, as they make the theorems more short and to the point. On the other hand - getting back to this book for a quick review on some subject might force you to flip pages for a few minutes, just to remember the notation again. The authors intended this book to be a graduate level textbook or an up-to-date reference work for current research. I believe they accomplished both targets!

I just downloaded the sample but I found myself struggling to read the symbols. Sometimes even after enlarging I couldn't read it. Just thought I'd point this out for any kindle users like myself.

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