

Discrete Math: Math-2420 Strengths and Weaknesses Spring 2009 Book Search

Title: Discrete Mathematical Structure, 6th Edition

By Kolman, Busby, Ross - Prentice-Hall

Strengths:

- ♦ Starts in the right place, with a little background, then logic and proofs. Goes basically in the right order.
- ♦ How to write algorithms in pseudocode is in Appendix A.
- ♦ Has a section on lattices, which is important for discussing Boolean algebras.
- ♦ It is computer-science oriented, without being heavy on coding and implementation. For instance, in the chapter on trees they discuss linked lists, and when talking about functions they go into a discussion on the complexity of algorithms.
- ♦ Clear and easy to read
- ♦ Contains a sufficient number of exercises on each topic.
- ♦ Appendix A, Algorithms and Pseudocode, is very nice.
- ♦ Relations and digraphs are treated as two aspects of the same fundamental mathematical idea.
- ♦

Weaknesses:

- ♦ Not many exercises; and exercises have a tendency to be dull.
- ♦ Has several chapters containing material we don't cover, such as group theory and error detection/cryptology.
- ♦ Contains nearly all the materials listed in the CCO, but it is missing numbers in binary, hex, and octal forms.
- ♦

Title: Discrete Mathematical

By Ferland, - Houghton-Mifflin

Strengths:

- ♦ Very readable with nice detailed examples and problems.
- ♦ Covers almost all the necessary topics in CCO.
- ♦ Very nice collection of problems
- ♦ Strong on counting
- ♦ Contains nearly all the materials listed in CCO, except for addition and subtraction of numbers in binary form.
- ♦ Includes exercises for Maple and Mathematica

Strengths:

- ♦ It is more expensive than the other two texts.
- ♦ Because the pages are not labeled with the section numbers, but only chapter numbers, it is difficult to find the section you want without using the table of content. We cannot tell what section we're in by looking at Example numbers or Theorem numbers neither, because they are all numbered by chapter, not by section.
- ♦ Some sections/chapters are densely packed with course material; as a result there are relatively few exercises on some topics.
- ♦ The level of this book is uneven, for example: 1) one exercise is marked as "particularly challenging" because it requires the use of the quadratic equation; 2) intervals and interval notation are defined rather than assumed to be known.
- ♦ It uses some nonstandard terminology and notation.

Title: Discrete mathematics with Applications, 3rd Edition

By: Susanna Epp, - Brooks/Cole

Strengths:

- ♦ ----
- ♦ ----

Weaknesses:

- ♦ ----
- ♦ ----