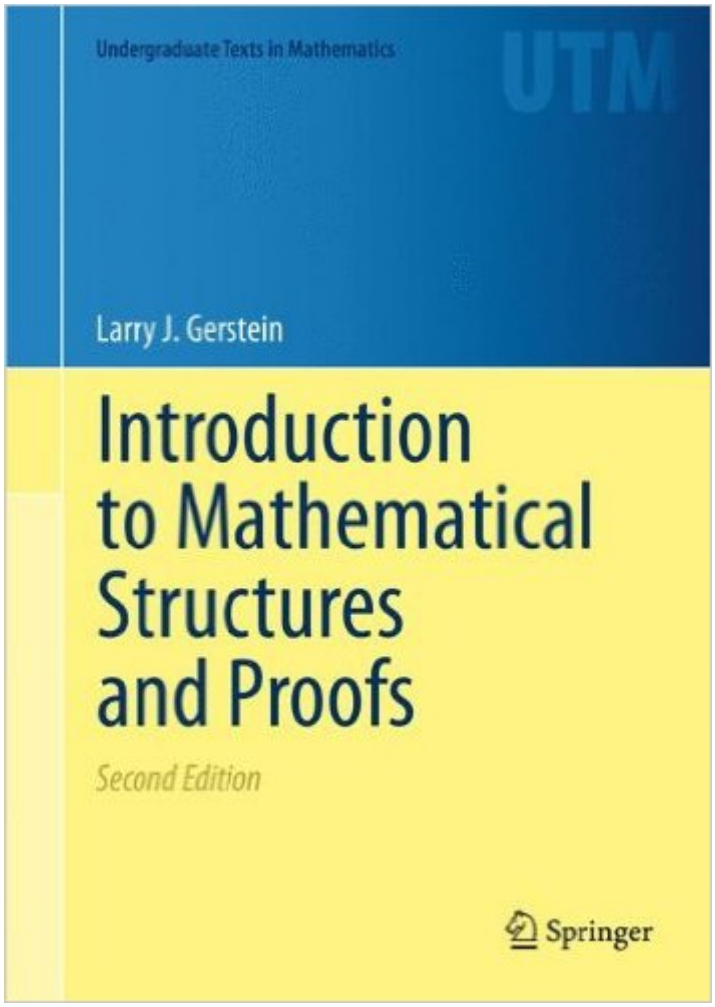
Introduction To Mathematical Structures And Proofs (Undergraduate Texts In Mathematics)



Synopsis

As a student moves from basic calculus courses into upper-division courses in linear and abstract algebra, real and complex analysis, number theory, topology, and so on, a "bridge" course can help ensure a smooth transition. Introduction to Mathematical Structures and Proofs is a textbook intended for such a course, or for self-study.Â This book introduces an array of fundamental mathematical structures. It also explores the delicate balance of intuition and rigorâ •and the flexible thinkingâ •required to prove a nontrivial result.Â In short, this book seeks to enhance the mathematical maturity of the reader. The new material in this second edition includes a section on graph theory, several new sections on number theory (including primitive roots, with an application to card-shuffling), and a brief introduction to the complex numbers (including a section on the arithmetic of the Gaussian integers). Solutions for even numbered exercises are available on springer.com for instructors adopting the text for a course. From a review of the first edition: "...Gerstein wantsâ •very gentlyâ •to teach his students to think. He wants to show them how to wrestle with a problem (one that is more sophisticated than "plug and chug"), how to build a solution, and ultimately he wants to teach the students to take a statement and develop a way to prove it...Gerstein writes with a certain flair that I think students will find appealing. ...I am confident that a student who works through Gerstein's book will really come away with (i) some mathematical technique, and (ii) some mathematical knowledgeâ |.Gersteinâ ™s book states quite plainly that the text is designed for use in a transitions course.Â Nothing benefits a textbook author more than having his goals clearly in mind, and Gersteinâ ™s book achieves its goals.Â I would be happy to use it in a transitions course.â • â •Steven Krantz, American Mathematical Monthly

Book Information

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Customer Reviews

Dr. Gerstein is now a friend of mine. I highly recommend this textbook in the Field of Logic and Mathematics.

We are using this book in my Foundations of Math class, which deals a lot with graph and set theory, as well as proofs. The professor chose the book after listening to the author speak at a conference, and I'd say it was a good choice. The book reads very easily, and the problems do well at not being overly complex, while still being challenging enough to conduce learning.