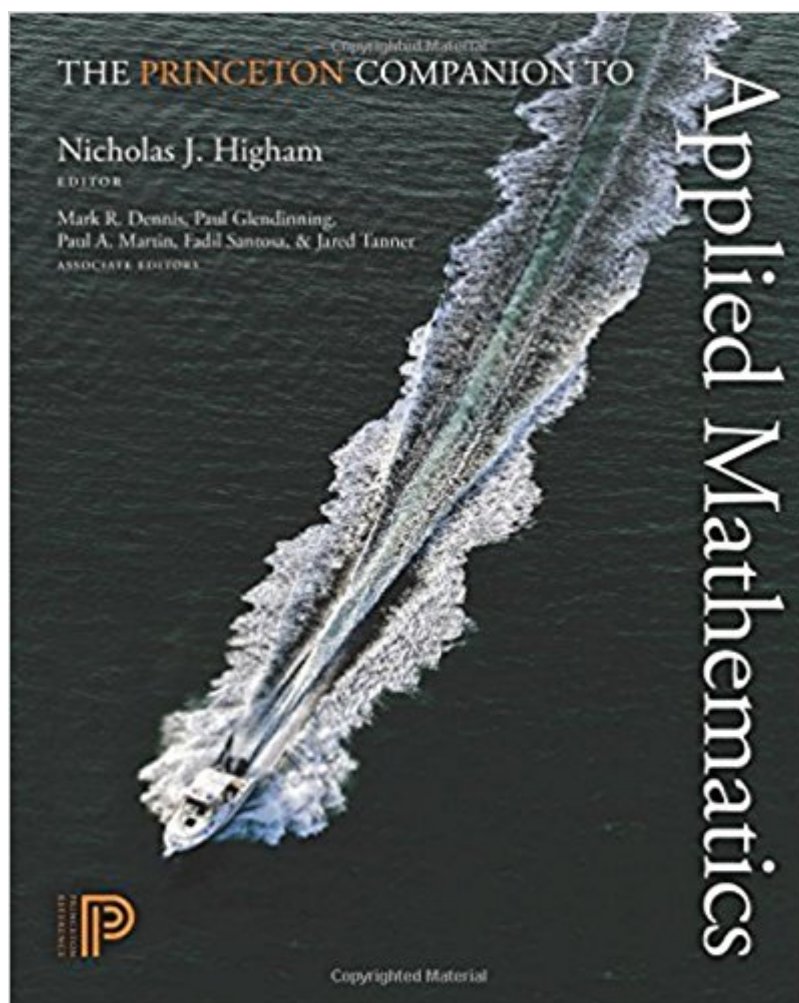


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# The Princeton Companion To Applied Mathematics



## Synopsis

This is the most authoritative and accessible single-volume reference book on applied mathematics. Featuring numerous entries by leading experts and organized thematically, it introduces readers to applied mathematics and its uses; explains key concepts; describes important equations, laws, and functions; looks at exciting areas of research; covers modeling and simulation; explores areas of application; and more. Modeled on the popular Princeton Companion to Mathematics, this volume is an indispensable resource for undergraduate and graduate students, researchers, and practitioners in other disciplines seeking a user-friendly reference book on applied mathematics. Features nearly 200 entries organized thematically and written by an international team of distinguished contributors. Presents the major ideas and branches of applied mathematics in a clear and accessible way. Explains important mathematical concepts, methods, equations, and applications. Introduces the language of applied mathematics and the goals of applied mathematical research. Gives a wide range of examples of mathematical modeling. Covers continuum mechanics, dynamical systems, numerical analysis, discrete and combinatorial mathematics, mathematical physics, and much more. Explores the connections between applied mathematics and other disciplines. Includes suggestions for further reading, cross-references, and a comprehensive index.

## Book Information

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remarkable compendium of insight from across the sciences. Whether you want new insights into your own field or just want to learn something interesting about the world, this book is an ideal place to start."--John H. Miller, Carnegie Mellon University and the Santa Fe Institute

"The editors are distinguished scientists and, perhaps of even more significance for a reference book like this, excellent expositors of mathematics across a range of levels."--Jan Hesthaven, Swiss Federal Institute of Technology in Lausanne

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"There is nothing like The Princeton Companion to Applied Mathematics, which will be extremely useful to both researchers and the mathematically inclined public. We have needed a book like this."--Steven Strogatz, author of *The Calculus of Friendship: What a Teacher and a Student Learned about Life while Corresponding about Math*

Excellent hefty reference book covers a broad spectrum of applied math topics in relatively short (several pages) and self-contained chapters. For the most part, you can dip into individual chapters as needed. The chapters are accessible for readers with a background at the lower division (sometimes upper division) undergraduate level but they have enough detail to provide a good start for more advanced practitioners. I would highly recommend this book.

Are you a mathematician? If you are, then this book is for you. Editors Mark R. Dennis, Paul Glendinning, Paul A. Martin, Fadil Santosa and Jared Tanner, have edited, managed and written an outstanding book, along with over 163 authors/contributors, that increasingly make use of algorithms and computation; as well as, a number of aspects that interface with computer science. The authors and editors begin by discussing what applied mathematics is and giving examples of the use of applied mathematics in every day life. Next, they focus on specific concepts that cut across different models and areas. Then, the authors and editors describe numerous examples with regards to equations, laws, and functions of applied mathematics. Also, they give an overview of applied mathematics areas and how they are organized and arranged by research area. Then, the authors and editors present a selection of mathematical models; and, explain how they are derived and solved. In addition, they cover a variety of interesting applied mathematics problems. Also, the authors and editors focus on connections between applied mathematics and other disciplines, including such diverse topics as integrated circuit (chip) design, medical imaging, and the screening of luggage in airports. Finally, they provide a summary of the book's approach on the broader aspects of reading, writing and typesetting mathematics; teaching applied mathematics; and, how to influence government as a

mathematician. This excellent book is about applied mathematics, why it is important, its connections to other disciplines, and some of the main areas of current research. This great book also explains what applied mathematicians do; which includes not only studying the subject itself, but also writing about mathematics, teaching it, and influencing policy makers.

Amazballz

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This is a useful reference

If you like applied maths, don't hesitate to buy this book. I am a retired engineer in applied mathematics and I did see and follow the evolution of the field (introducing MATLAB in my company many years ago). Now I have more time to look at the so many diverse and interesting aspects of the field. I recommend this book and also the Princeton Companion to Mathematics, both are your time worth.

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