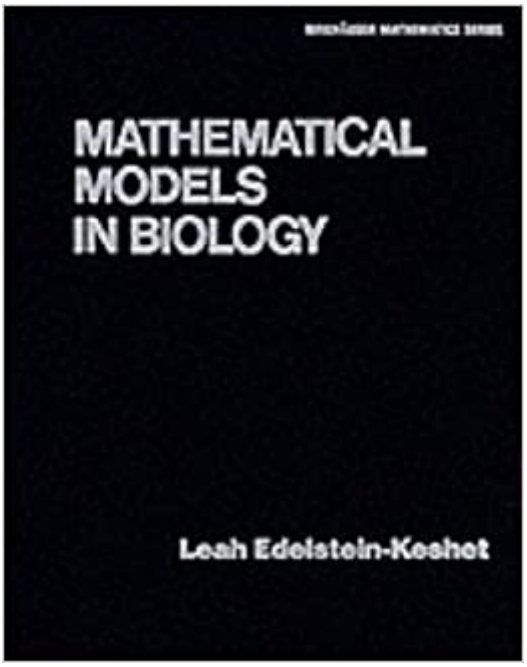
Mathematical Models In Biology



Synopsis

The major aim of this book is to present instances of interaction between two major disciplines, biology and mathematics. The goal has been that of addressing a fairly wide audience. Biology students will find this text useful as a summary of modern mathematical methods currently used in modelling, and furthermore, applied mathematics students may benefit from examples of applications of mathematics to real-life problems. As little background as possible has been assumed throughout the book: prerequisites are basic calculus so that undergraduate students, as well as beginning graduate students, will find most of the material accessible.

Book Information

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Customer Reviews

This book is an introduction for readers interested in biological applications of mathematics and modeling in biology, showing how relatively simple mathematics can be applied to a variety of models. Despite the great advances that have taken place, the simple lessons described in the text are still important and informative. --This text refers to an out of print or unavailable edition of this title.

Leah Edelstein-Keshet is a member of the Mathematics Department at the University of British Columbia and past president of the Society for Mathematical Biology. She has been involved in research in mathematical biology for over 30 years, most recently as a team leader of a

Mathematics of Information Technology and Complex Systems MITACS (Canada) biomedical modeling team. --This text refers to an out of print or unavailable edition of this title.

I’ve taught out of this text several times; the positive is that it contains a wealth of material that would require extensive knowledge of the literature for an instructor to reproduce on their own.There is a major negative: the text is pedagogically opaque. The author’s technique is to begin with a difficult problem, involve the reader in complex computations, then leave the reader flat, with no discussion of what’s been accomplished, how or why a model might be modified and what that might mean biologically, etc.Nowhere is this clearer than in the treatment of the Hodgkin-Huxley equations. I think one would be hard put to gain any understanding of the derivation of the equations, or their biological meaning, from the text. This was Nobel Prize work, and has led to other Nobels; it deserves better.There’s an old saying: when you do mathematical biology, you can emphasize the first word or the second. This text is firmly on the ’mathematical’ side.

Excellence!

This book is a holy grail of anyone interested in mathematical biology besides the books on mathematical biology by J D Murray.

Brought it a few days ago it came exactly as the seller describedawesome thank you

The errata is a bit annoying if not pointless. Why not just edit errors within the book. Otherwise, great book.

I hadn’t taken much applied math before, so Edelstein’s book was a great introduction. Our class also used James Murray’s textbook, but I found Edelstein much more detailed and approachable.

While the book seems to be fairly well written, reading easily with examples worked out in full detail, there are an abundance of errors throughout the text. Rather than actually correcting these errors, the publisher instead decided to put an "Errata" section at the beginning of the book, leaving the mistakes strewn throughout the text. So, prior to reading a chapter, one must look up what errors there are and either make a mental note or correct it by hand. Since the errors are quite copious, 16 pages worth in all with an error every 5 pages, it becomes extremely distracting.From the author’s

webpage, the following is a list of errata in this edition: [...].

I come from a Physics background, so I have extensive knowledge of Differential Equations, Calculus, etc. This has to be one of the WORST books I've ever read. First of all, it's filled with almost 15 pages of "Errata" - including the author messing up a Taylor Series Expansion. That's ridiculous - no publisher should have allowed this book to go on the market so full of mistakes with the author so unwilling to correct them.Secondly, the book teaches you absolutely no Math at all. Half of the lectures in each chapter are obscure, random models the author picked, and suddenly is capable of making assumptions about each model that seem completely arbitrary. There is no reasoning behind half of the steps the author takes.I'm sorry, but I swear I'm becoming bad at math trying to use this textbook. Using this book is a waste of time and money. I can't wait to put it in the fireplace.