An Introduction to Mathematical Epidemiology (Texts in Applied Mathematics)

Maia Martcheva
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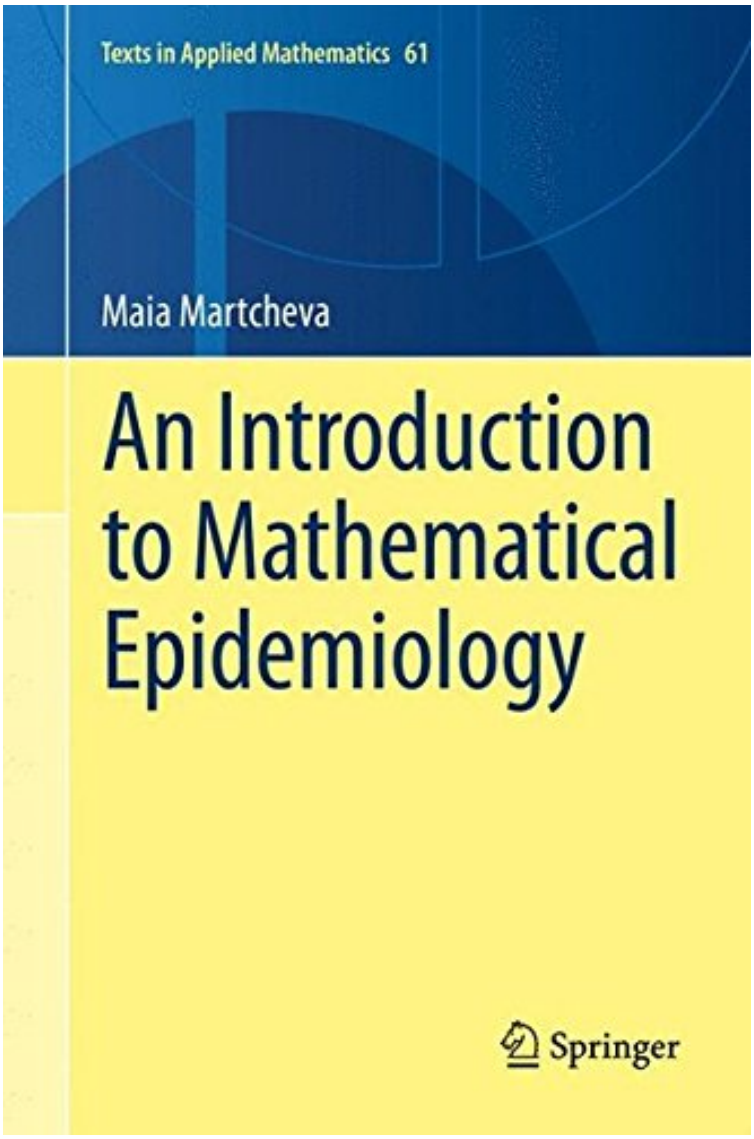

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Maia Martcheva : An Introduction to Mathematical Epidemiology (Texts in Applied Mathematics) before purchasing it in order to gage whether or not it would be worth my time, and all praised An Introduction to Mathematical Epidemiology (Texts in Applied Mathematics):

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detailed probability book on population models in public health. Proofs, theorems, graphs, set theory, epidemic models are used to help understand mortality and morbidity rates. The mathematical approach is complex and not an introduction to the field. The formalism and definitions in symbolism is not presented for epidemiologists. Public health professionals will find it a difficult read, restricting its use to specialized mathematical and statistics circles.Other books from Wiley by Gail (e.g.. Encyclopedia of Epidemiological Methods) are more readable and useful. I would use the book as a reference for running computer simulations concerning predicted outcomes. This is also not a book for a graduate course in Epidemiology.0 of 0 people found the following review helpful. Five StarsBy CustomerThoughtful and well organized

The book is a comprehensive, self-contained introduction to the mathematical modeling and analysis of infectious diseases. It includes model building, fitting to data, local and global analysis techniques. Various types of deterministic dynamical models are considered: ordinary differential equation models, delay-differential equation models, difference equation models, age-structured PDE models and diffusion models. It includes various techniques for the computation of the basic reproduction number as well as approaches to the epidemiological interpretation of the reproduction number. MATLAB code is included to facilitate the data fitting and the simulation with age-structured models.

The current book is an introductory text that starts at the level of the neophyte and gradually brings the student to the level of current research. The target readers include advanced undergraduate and graduate students in mathematics as well as graduate students in other fields. This is an appealing book, well-written and thoughtfully organized. (William J. Satzer, MAA reviews, maa.org, January, 2016)This book does not limit itself by any means to be just an introductory level textbook, aiming actually to be a comprehensive, self-contained reference text for mathematical epidemiologists. The presentation is example-based, well thought out and very carefully organized. The book has the clarity of a textbook while having the depth of a monograph, the author always being successful in conveying the content of a topic regardless of its difficulty. (Paul Georgescu, zbMATH 1333.92006, 2016)From the Back CoverThe book is acomprehensive, self-contained introduction to the mathematical modeling and analysis of infectious diseases. It includes modelbuilding, fitting to data, local and global analysis techniques. Various types of deterministic dynamical models are considered: ordinary differential equation models, delay-differential equation models, difference equation models, age-structured PDE models and diffusion models. It includes various techniques for the computation of the basic reproduction number as well as approaches to the epidemiological interpretation of the reproduction number. MATLAB code is included to facilitate the data fitting and the simulation with age-structured models.About the AuthorMaia Martcheva is a Professor in the Department of Mathematics at the University of Florida, USA. Her areas of interest and research include: epidemic models of multi-strain interactions, spatial epidemic modeling, immunological modeling, and immune-epidemiological modeling.