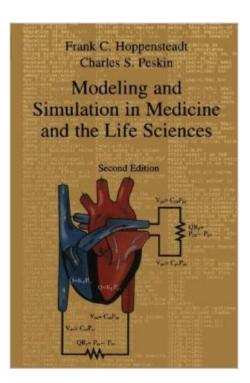
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## Modeling And Simulation In Medicine And The Life Sciences (Texts In Applied Mathematics)





## Synopsis

The result of lectures given by the authors at New York University, the University of Utah, and Michigan State University, the material is written for students who have had only one term of calculus, but it contains material that can be used in modeling courses in applied mathematics at all levels through early graduate courses. Numerous exercises are given as well as solutions to selected exercises, so as to lead readers to discover interesting extensions of that material. Throughout, illustrations depict physiological processes, population biology phenomena, corresponding models, and the results of computer simulations. Topics covered range from population phenomena to demographics, genetics, epidemics and dispersal; in physiological processes, including the circulation, gas exchange in the lungs, control of cell volume, the renal counter-current multiplier mechanism, and muscle mechanics; to mechanisms of neural control. Each chapter is graded in difficulty, so a reading of the first parts of each provides an elementary introduction to the processes and their models.

## **Book Information**

Series: Texts in Applied Mathematics (Book 10) Hardcover: 355 pages Publisher: Springer; 2nd edition (January 16, 2004) Language: English ISBN-10: 0387950729 ISBN-13: 978-0387950723 Product Dimensions: 6.1 x 0.9 x 9.2 inches Shipping Weight: 1.4 pounds (View shipping rates and policies) Average Customer Review: 3.7 out of 5 stars Â See all reviews (7 customer reviews) Best Sellers Rank: #649,554 in Books (See Top 100 in Books) #25 in Books > Science & Math > Mathematics > Applied > Biomathematics #450 in Books > Textbooks > Science & Mathematics > Biology & Life Sciences > Ecology #518 in Books > Reference > Encyclopedias & Subject Guides > Medical

## **Customer Reviews**

Excellent text on modeling physiological systems. It wastes few words. A knowledge of algebra and elementary calculus is necessary but not more. A working knowledge of physiology is helpful but also not necessary. I would highly recommend this book to anyone studying medical engineering.

The samples use in the book to cover different topics like the cardiac system or the cell membrane potential in MATLAB are useful and well written. The book could be simplified in the way it is written to make it more accessible to students and non mathematicians. I liked the book in general since the samples were so complete.

This version of the book is good enough. Some of the words and letters are really hard to understand, especially the sub-print, so it can get frustrating when you need to study or do homework. Only buy if you need the book immediately.

Love the way this book is written. Easy to follow and understand. Nice explanations. Not exactly the kind of book I would see myself leisurely read, yet that's exactly what I was doing!

Modeling and Simulation in Medicine and the Life Sciences (Texts in Applied Mathematics) Mathematical Modeling of Collective Behavior in Socio-Economic and Life Sciences (Modeling and Simulation in Science, Engineering and Technology) Applied Groundwater Modeling, Second Edition: Simulation of Flow and Advective Transport Simulation for Designing Clinical Trials: A Pharmacokinetic-Pharmacodynamic Modeling Perspective (Drugs and the Pharmaceutical Sciences) Finite Mathematics for Business, Economics, Life Sciences, and Social Sciences (13th Edition) Applied Mathematics for the Managerial, Life, and Social Sciences (Textbooks Available with Cengage Youbook) Applied Mathematics for the Managerial, Life, and Social Sciences Finite Mathematics for Business, Economics, Life Sciences and Social Sciences, Books a la Carte Edition (13th Edition) College Mathematics for Business, Economics, Life Sciences & Social Sciences (11th Edition) Books of Breathing and Related Texts -Late Egyptian Religious Texts in the British Museum Vol.1 (Catalogue of the Books of the Dead and Other Religious Texts in the British Museum) Mosfet Modeling for VLSI Simulation: Theory And Practice (International Series on Advances in Solid State Electronics) (International Series on Advances in Solid State Electronics and Technology) Introduction to Modeling and Simulation of Technical and Physical Systems with Modelica Simulation, Second Edition: Programming Methods and Applications (Statistical Modeling and Decision Science) Introduction to Device Modeling and Circuit Simulation FinFET Modeling for IC Simulation and Design: Using the BSIM-CMG Standard Switched Reluctance Motor Drives: Modeling, Simulation, Analysis, Design, and Applications (Industrial Electronics) Polymer Processing: Modeling and Simulation Modeling Risk, + DVD: Applying Monte Carlo Risk Simulation, Strategic Real Options, Stochastic Forecasting, and Portfolio Optimization Dynamic Systems:

Modeling, Simulation, and Control "The Handbook of Nanotechnology. Nanometer Structures: Theory, Modeling, and Simulation (SPIE Press Monograph Vol. PM129)"

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