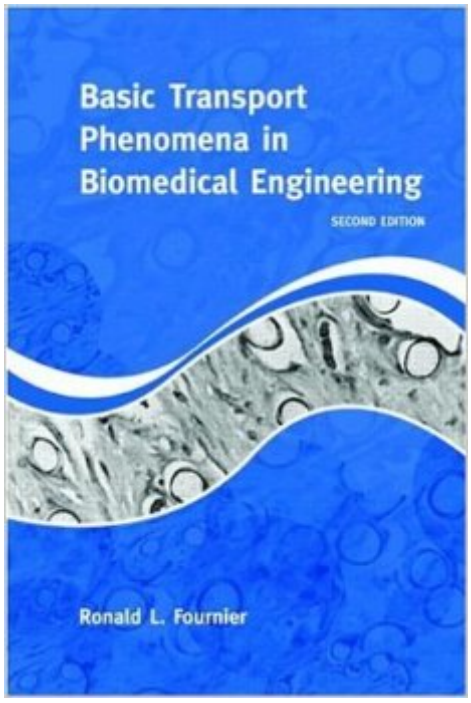
Basic Transport Phenomena In Biomedical Engineering, 2nd Edition



Synopsis

This text combines the basic principles and theories of transport in biological systems with fundamental bioengineering. It contains real world applications in drug delivery systems, tissue engineering, and artificial organs. Considerable significance is placed on developing a quantitative understanding of the underlying physical, chemical, and biological phenomena. Therefore, many mathematical methods are developed using compartmental approaches. The book is replete with examples and problems.

Book Information

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Customer Reviews

I used this book for an introductory course in Physiological Transport Phenomena. The book is great in that the author covers most of the transport processes as they apply to biological systems and provide numerous references and useful physical property data. Its nice to see how traditional transport concepts can be applied to problems for a system which everyone of us is very familiar with, namely the human body. The only criticism is that the book does not cover heat transfer and its applications to physiological systems. Luckily my professor provided handouts and supplimental material to the lecture. One of the books he used was the fairly old text by Cooney, "Biomedical Engineering Principles: An introduction to Fluid, Heat and Mass Transport Processes". I think this book is out of print but seems to have great information contained in it as well.This book is a definite must have for any biomedical engineering student and possibly even experienced people working in the field.

What can I say, odds are you have to buy this whether you like it or not. In the off chance that you don’t this one of the better Engineering text books. One huge thing is that it has a list of variables in the beginning of the book. This is NOT common in engineering text books and is a great help, especially if you are forgetful like me. It included examples that, while helpful, did not always explain their logical leaps or assumptions.

I have used some chapters of this book to teach a transport phenomena course. The text is well arranged for students, with significant problems and worked-out examples. Notation is explained. The introduction chapters give an often needed review of physical chemistry. Some chapters could be rewritten for additional clarity but it is a very useful text as it is.

Biomedical Engineering requires chemical engineering principles in several areas. This book highlights on those in particular and is a must for chemical engineers who want to know what their challanges are going to be in such biomedical engineering research areas. This also is a primer for the subject, although from a chemical engineering point of view. Ideal for a Bioengineering/Biomedical Engineering course in any chemical/ environmetal engineering department.

Let me make one thing clear: I am not reviewing the book’s content. I’m just a student, and I have not yet read through the book. But, as an ebook, it could be better designed.The very first problem I noticed is that chapter 3 appeared to be missing. Clicking on chapter 3 in the table of contents did nothing. Going to the end of chapter 2 and clicking to the next page took me to chapter 4. Going to the beginning of chapter 4 and clicking back took me to the end of chapter 2. Or so it seemed. Upon closer inspection, it seems chapter 3 is combined with chapter 2: the link is broken.The other thing that would be useful would be to have section headings in the table of contents as well, and be able to navigate using those. An expandable menu for each chapter would do the job here.Finally there seems to be a problem with the "sync to furthest location read" button. No matter how far I’ve gone in the book (and I scrolled through it all to check for any missing pages when I thought chapter 3 was missing), clicking this button tells me "Already at furthest read location".Oh, one more thing. Bookmarking, then using the bookmark to get to the bookmarked page, takes me to the bottom of the page rather than the top. This is quite annoying as I want to start reading from the top of the page, not the bottom.

It was very readable, a major plus since my professor spoke little English. Overall, it was worth the cost of the book.

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