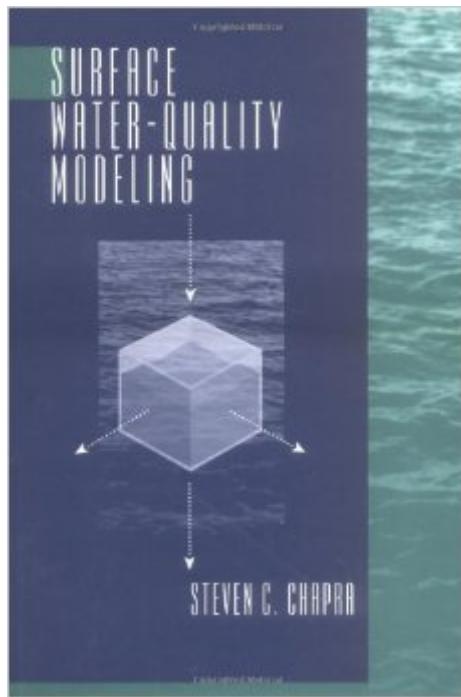


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# Surface Water Quality Modeling



## Synopsis

Since the 1920's, scientists and engineers around the globe have been using mathematical models to simulate the transport and fate of pollutants in natural waters. Today, and in the foreseeable future, more of these applications are being generated in an effort to develop economical solutions to water-quality problems. The primary audience for this book is first-year graduate students, including both MA and Ph.D. students. The book, however, could be used as a basis for a senior undergraduate course. The text is divided into seven major parts. The first two cover Modeling Fundamentals, (including material on mathematics, numerical methods, kinetics, diffusion, etc). The remaining parts deal with major water-quality modeling problems such as dissolved oxygen, eutrophication, and toxics. The text is written in lecture format, ideal for case study and teaching purposes. The book stresses theory and application.

## Book Information

Series: McGraw-Hill Series in Water Resources and Environmental Engi

Hardcover: 784 pages

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Average Customer Review: 4.3 out of 5 starsÂ See all reviewsÂ (15 customer reviews)

Best Sellers Rank: #1,151,613 in Books (See Top 100 in Books) #383 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Environmental > Water Quality & Treatment #579 in Books > Engineering & Transportation > Engineering > Civil & Environmental > Structural #581 in Books > Textbooks > Engineering > Environmental Engineering

## Customer Reviews

I found this book to be extremely useful. It covers the necessary issues of surface water modeling, such as reaction kinetics, mixed vs non-mixed systems, a variety of possible contaminants and indicators, as well as a variety of surface water body types. Each part of the book is a series of lectures containing theory as well as practical modeling methods. The text is clear and flows well, with occasional comical examples and literary quotes.

This is a great book. In fact, it is the best book if like me, you don't have time to follow a teacher-led course. Stephen Chapra has authored/co-authored several engineering texts, and this one is just as well-written as the others. My need was for a text which had the right balance of theory and practical implementation details. Since I develop water-quality & hydrodynamics software, I also was concerned with numerical methods issues. This book met my needs. Chapra has a very enjoyable style. I like his sometimes 'anecdotal' style, whereby he gives you historical or background blurbs which help view things in their proper context.\*\* One of the rare qualities of Chapra's books is to provide both the mathematical modeling theory, and the practical sampling and statistical tools to implement them with real data. This is so often overlooked by other authors. I look forward to his next book on numerical methods with Matlab & Excel.

The text covers a lot of worthwhile material, but it is not easy to understand. The written sections and examples don't always pertain to the homework problems. The examples don't explain the solution step by step, but often skip key steps with phrases like "the following can be derived".

The book is based on having a working knowledge of diff eq and builds upon it sequentially through a series of lectures as chapters in the book. Written by one of the top water quality modelers in the world, this is a book that's easy to follow and also serves as great reference for common mass balances found in nature and water treatment processes

This is one of the best textbooks I have used. Chapra does a great job providing a simple foundation before building up to advanced concepts. The chapters are very concise and extra time is given to fill in gaps that students may have in their numerical methods background. One of my favorite things about this book is that it gives a large number of worked out sample problems some of which contain real data. Five stars!

Pro: I knew the book is excellent because I have read a major portion before purchase. I bought it because it is an excellent reference book for water quality studies. The book is no longer in print but sold a copy to me in SI unit. Con: packing is terrible and caused multiple dog ears to my new book. Can be more professional in the packaging department please.

Although I can't say that I am in love with the content of this book, it was purchased as a textbook for a water quality modeling class I am currently enrolled in, the delivery was so fast and arrived just

in time to work on my first homework assignment. I had ordered this book from another seller 2 weeks ago and they sent me the wrong book! This book arrived in just 1 day after being shipped and I was amazed. Very pleased with this purchase.

I read this book twice, an awesome book for environmental engineers especially if you are studying Mixing Pollutant in Aquatic Systems. You need to have some basic knowledge in environmental hydraulic to get the most benefit from this book, although this book reviews them all at the beginning.

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Series in Industrial Engineering and Management) ISO 10005:2005, Quality management systems - Guidelines for quality plans

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