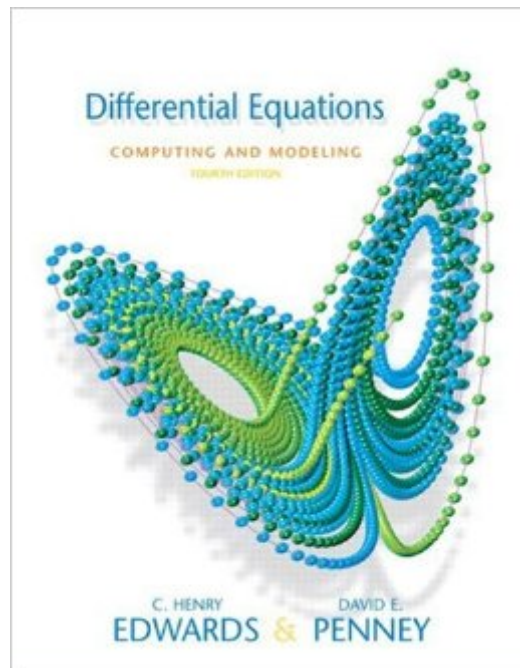# Differential Equations Computing And Modeling (4th Edition)

Synopsis

This practical book reflects the new technological emphasis that permeates differential equations, including the wide availability of scientific computing environments like Maple, Mathematica, and MATLAB; it does not concentrate on traditional manual methods but rather on new computer-based methods that lead to a wider range of more realistic applications.   The book starts and ends with discussions of mathematical modeling of real-world phenomena, evident in figures, examples, problems, and applications throughout the book.   For mathematicians and those in the field of computer science and engineering. Â Â Â

Book Information

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Customer Reviews

This book has several problems.1. There are numerous typos in the text as well as in the solutions printed in the back of the book (and in the solutions manual). It can be very frustrating to puzzle over a problem for a long time only to find you were right and the book was wrong.2. Several important techniques are only explained as short paragraphs in the exercise section (ie Euler Equation substitution, Reduction of Order, and others). You are left to try and figure out how to apply the vague instructions by looking at the solutions manual or asking someone else. I found this to be the biggest problem with the book.3. The end of each example or concept is marked by a small red box in the margin of the page. These boxes are easy to miss so the distinction between example and theory, as well as between different aspects of the theory will become blurred unless you pay close attention to when the red boxes appear. Consequently results derived from theory and results

derived from specific examples tend to blend together.4. Often the authors add length to problems by providing the given values in non-SI units and the constants of nature in SI units. While this isn't a serious problem with the book, it would make the book needlessly annoying if you were using it for self study.For the class that required this book I ended up checking out a different textbook on differential equations from the library to learn from. I only used this one for the questions we were assigned. If you have any choice in the matter I would recommend getting a different book.

I think the strength of this textbook is the amount of material it encompasses: this book is used in two separate courses in my school--introduction to DE and engineering analysis. I didn't appreciate the textbook so much until I completed my differential equations course and then looked back at the sections on mechanical vibrations to review for my physics course. I then realized that the explanations and derivations were extremely satisfying, much more than your average introductory physics text. Also, the emphasis on the qualitative aspects of DEs, such as slope fields and phase portraits, aid in the coneptual understanding of the otherwise rigorous computation aspects of the topic. My only complaint is that the proofs could've been done in a more understandable manner.

This book is great if you know Differential Equations. I had a professor that did not teach intricacies well, he gave us the basics and left us to learn the harder stuff on our own. This book sucks to learn from as it is not clear at times on explaining concepts and jumps through steps that are helpful when learning a process. There are great examples that are relative to the real world in this book which is what I liked best about it. The problems I have with this textbook are similar to the problems I have with most math textbooks. It's written by professors for professors and leaves the students scratching their heads...

Not a bad book at all. Physical applications well explained, theory OK but not as good in my opinion. Unfortunately, contains a fair number of typos, and the book is physically weak (the binding of mine is splitting after only 4 months of use) for a book of this price. Still, pretty good overall.

This textbook was very well written and gives great examples. It contains the answers to many of the chapter review questions. This was very helpful for studying. My only complaint is the incredibly high price.

This book is terrible. The examples are trivial, nothing is explained well, and the Theorems are only

given and then haphazardly discussed. I highly recommend these two texts which will cost you about $30 total and provide a much better understanding of an introductory ODE class.Schaum's outline of Differential Equations, 3rd Edition--Richard Bronsonand Ordinary Differential Equaions--Morris TenebaumBoth of these were highly recommended by my professor and I'm glad she did.

Luckily I had a very good professor for this class, so I didn't need to depend on the text as much as I might have to in other classes. As an engineering student, I don't ignore theory, but I do need a few more worked examples for the text to be really useful for me. Don't get me wrong, I appreciate rigor and I do like mathematics for its own sake, but, I could have used a little more emphasis on applications than this text provided.

This book is an excellent resource for anybody studying Differential Equations. Its succinct and to the point, with great examples that easily explain how to use the theorems and solve the equations. The only downside is that sometimes in the examples the author's expect you to know the calculus and algebra and therefore skip some steps.I highly recommend this textbook!

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