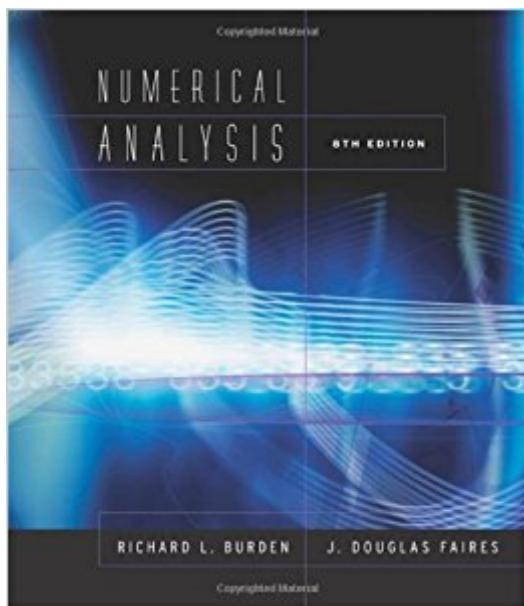


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# Numerical Analysis (Available Titles CengageNOW)



## **Synopsis**

This well-respected text gives an introduction to the modern approximation techniques and explains how, why, and when the techniques can be expected to work. The authors focus on building students' intuition to help them understand why the techniques presented work in general, and why, in some situations, they fail. With a wealth of examples and exercises, the text demonstrates the relevance of numerical analysis to a variety of disciplines and provides ample practice for students. The applications chosen demonstrate concisely how numerical methods can be, and often must be, applied in real-life situations. In this edition, the presentation has been fine-tuned to make the book even more useful to the instructor and more interesting to the reader. Overall, students gain a theoretical understanding of, and a firm basis for future study of, numerical analysis and scientific computing. A more applied text with a different menu of topics is the authors' highly regarded **NUMERICAL METHODS**, Third Edition.

## **Book Information**

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## **Customer Reviews**

Richard L. Burden is Emeritus Professor of Mathematics at Youngstown State University. His master's degree in mathematics and doctoral degree in mathematics, with a specialization in numerical analysis, were both awarded by Case Western Reserve University. He also earned a masters degree in computer science from the University of Pittsburgh. His mathematical interests include numerical analysis, numerical linear algebra, and mathematical statistics. Dr. Burden has

been named a distinguished professor for teaching and service three times at Youngstown State University. He was also named a distinguished chair as the chair of the Department of Mathematical and Computer Sciences. He wrote the Actuarial Examinations in Numerical Analysis from 1990 until 1999. J. Douglas Faires, late of Youngstown State University, pursued mathematical interests in analysis, numerical analysis, mathematics history, and problem solving. Dr. Faires won numerous awards, including the Outstanding College-University Teacher of Mathematics by the Ohio Section of MAA and five Distinguished Faculty awards from Youngstown State University, which also awarded him an Honorary Doctor of Science award in 2006.

I'm a grad student and I recently had to learn how to numerically solve PDE's. I'm rather new to computer programming and numerical analysis in general. I've really only been in my field for about 1 year now. I picked up this book and went straight to Chapter 12. It explained everything quite concisely and had very clear descriptions and diagrams. Armed with pen and paper, I learned how to numerically solve these PDE's quite quickly. It was honestly a fun experience. Whenever there were tools that I was missing, the authors would reference the section and chapter where you could find the necessary tools. I believe this book was written as a reference, as well as, textbook. A problem that many textbooks suffer from, is that the material is written in sequential order, with newer material depending heavily on the previous chapters. These types of books are not adept to being just picked up and read, to gather the relevant information. They require you to pretty much read all the preceding text to understand it, and who has time for that? This book is NOT like that. You can just pick it up and easily learn from it. Unlike Numerical Recipes, this provides the method with a very clear explanation and justification for the algorithms. Numerical Recipes is good, but its purpose is not to provide detailed explanations of why and how the algorithms work. To be able to use this text, I would suggest having taken Calc 1,2 & 3, differential equations, linear algebra class, and be comfortable with programming. I suspect that the folks complaining heavily about this text, are not very comfortable with Calculus, linear algebra, and/or programming. If you are an undergrad and have not taken those classes or are not comfortable with the material, I can see you struggling. If you are a grad student in Math or Physics, this text will be rather refreshingly easy to read. It will help fill in the necessary gaps in your knowledge of computational work, if you have any like I did. Enjoy!

I'm Biased since I had Richard Burden(Author) as my professor for Numerical Analysis and this is the book we used in his course (obviously). I doubt you'll be looking into any of these books unless

you need a reference material for a course or something, but there wasn't significant differences between this version and the next one. But from what I understand the most recent version has enough differences that if you need this for a course, to get the newest version. But, if you are just buying this for your own sake, this is a great book/version. The material in the book itself is a great resource, and I would argue that any CS student (or even just programmer who wants to be a bit better in his field) should know this material, that way they know how to evaluate run-time performance of a program (if nothing else). The book is fairly well understandable even if you aren't the best in math, so don't let that stop you if you are interested, there are online code snippets and evaluation programs you can try out and learn from also.

By reading the material in this book, the student is left with the theory and the examples necessary to understand and appreciate Numerical Methods in Engineering. There is no need to memorize formulas. Most students, with little bit of effort, can derive their own formulas to solve a specific problem. While the book is starting as a Numerical Methods Textbook, yet it helps the student to smoothly enter the world of Numerical Analysis. The topics included are more than enough for a two semester course presented in an easy-to-read style with lots of solved examples. I have been teaching Numerical Methods and Numerical Analysis for many years now and have found that this textbook provides adequate background and the necessary skills for my students. This book teaches how to derive numerical solutions to problems. That is perhaps the most important lesson of all.

ok

I rented this book. I feel like I received it in worse condition than it was advertised as, but I haven't been penalized for returning it in the same condition so no harm no foul I suppose. I only made it a few chapters into this book so I cannot speak to how the volume as a whole is, but I will say that from what I saw there were too few examples to illuminate difficult concepts and the examples used didn't help shed any additional light on topics being covered. Overall easy to understand.

Required textbook for a course in Numerical Analysis. I would probably seek another reference if given an opportunity, but that means I would have to read a lot of dry books to get there. It has some good sample code to assist in understanding the development of certain algorithms.

Fantastic reference for anyone with a solid mathematical background and in a research field requiring data analysis.

As described.

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