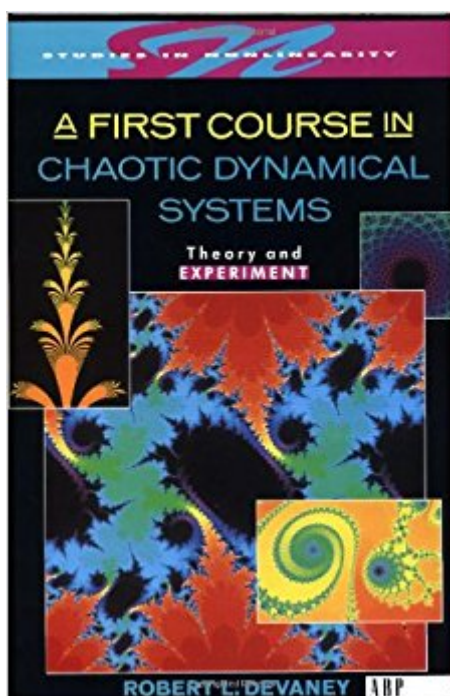


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A First Course In Chaotic Dynamical Systems: Theory And Experiment (Studies In Nonlinearity)



Synopsis

A First Course in Chaotic Dynamical Systems: Theory and Experiment is the first book to introduce modern topics in dynamical systems at the undergraduate level. Accessible to readers with only a background in calculus, the book integrates both theory and computer experiments into its coverage of contemporary ideas in dynamics. It is designed as a gradual introduction to the basic mathematical ideas behind such topics as chaos, fractals, Newton's method, symbolic dynamics, the Julia set, and the Mandelbrot set, and includes biographies of some of the leading researchers in the field of dynamical systems. Mathematical and computer experiments are integrated throughout the text to help illustrate the meaning of the theorems presented. Chaotic Dynamical Systems Software, Labs 1-6 is a supplementary laboratory software package, available separately, that allows a more intuitive understanding of the mathematics behind dynamical systems theory. Combined with A First Course in Chaotic Dynamical Systems, it leads to a rich understanding of this emerging field.

Book Information

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Customer Reviews

Professor Robert L. Devaney received his A.B. from Holy Cross College and his Ph.D. from the University of California at Berkeley in 1973. He taught at Northwestern University, Tufts University, and the University of Maryland before coming to Boston University in 1980. He served there as chairman of the Department of Mathematics from 1983 to 1986. His main area of research is

dynamical systems, including Hamiltonian systems, complex analytic dynamics, and computer experiments in dynamics. He is the author of *An Introduction to Chaotic Dynamical Systems*, and *Chaos, Fractals, and Dynamics: Computer Experiments in Modern Mathematics*, which aims to explain the beauty of chaotic dynamics to high school students and teachers.

This is a fine text, and I was able to follow it fairly easily. However, it is rather dated (1992) and there have been improvements in the subject in several areas. I found Steven Strogatz's "Nonlinear Dynamics And Chaos" (2001) a significantly better book for both content and readability.

I would recommend this book to anyone who wishes to learn about nonlinear systems. As a physicist, this is a good mathematical intro to nonlinear phenomena. For a more in depth look, check out a mechanics book.

Great Intro to chaotic dynamics even if you only have Calculus as a background. I used this book with a class, though, so it may be hard to understand without an instructor.

This text is a great beginners guide to chaotic systems, it provides very clear explanations and proofs as well as some examples to help you along.

Good

I bought this for my 16-year-old who is doing an undergraduate independent study in dynamics. His professor had him go through the material to the Feigenbaum limit. Lots of good exercises and a well-written exposition of the material. Additionally, he got the book signed by Dr. Devaney!

Nicely written

Excellent Book!

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