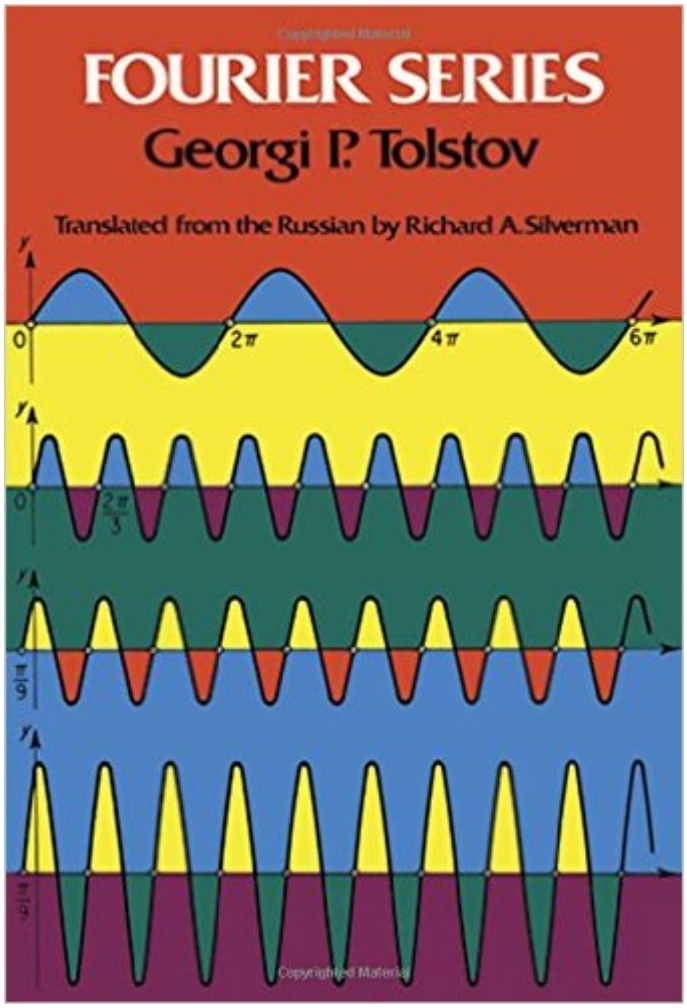
Fourier Series (Dover Books On Mathematics)



Synopsis

Richard A. Silverman’s series of translations of outstanding Russian textbooks and monographs is well-known to people in the fields of mathematics, physics, and engineering. The present book is another excellent text from this series, a valuable addition to the English-language literature on Fourier series.This edition is organized into nine well-defined chapters: Trigonometric Fourier Series, Orthogonal Systems, Convergence of Trigonometric Fourier Series, Trigonometric Series with Decreasing Coefficients, Operations on Fourier Series, Summation of Trigonometric Fourier Series, Double Fourier Series and the Fourier Integral, Bessel Functions and Fourier-Bessel Series, and the Eigenfunction Method and its Applications to Mathematical Physics. Every chapter moves clearly from topic to topic and theorem to theorem, with many theorem proofs given. A total of 107 problems will be found at the ends of the chapters, including many specially added to this English-language edition, and answers are given at the end of the text.Richard Silverman’s excellent translation makes this book readily accessible to mathematicians and math students, as well as workers and students in the fields of physics and engineering. He has also added a bibliography, containing suggestions for collateral and supplementary reading. 1962 edition.

Book Information

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Customer Reviews

This book is a great introduction to the theory of Fourier series. If, like me, you’re starting from scratch with a healthy calc background, you’ll have no trouble using this book for self-study. The

exercises are not trivial, but they won't take an hour each (like Whittaker & Watson).My one gripe is that, aside from trig systems, Fourier-Bessel systems, and one paragraph on Legendre polynomials, they fail to give any other examples of complete orthogonal systems. If you're looking for a general book on orthogonal functions, this is not it. It is, however, a perfect introduction to the Fourier theory.

This is an excellent book on Fourier series! All you need is first year calculus to understand most of what is going on in this book. However it is quite mathematical in nature and if you are looking for just a quick introduction without much fuss, than look elsewhere. If you are, like me, interested in more of the theory of Fourier Series then this book is excellent. As another reviewer pointed out the book only covers trig Fourier and Fourier-Bessel series which is unfortunate. I am using this book in aide of learning PDEs and I have to say all the books on PDEs I've read do not have an adequate discussion of Fourier-Bessel series other than their possible existence and the other relationships you can derive from Sturm-Liouville theory.The problems in Chapter 9 are excellent applications of Fourier Series in the study of PDEs. I should note that another HUGE plus to this book is that the answer to every question is in the back making it ideal for self-study.

Can't say anything wrong about this book. Initially I bought this because I wanted to get a little more out of the PDE. But man, after the reading the first 2 chapters, I was hooked on the subject. The most interesting matter happens in 3, 4 and 5 and after that it gets really really good when he talks about Bessel functions and Eigenfunction methods in the last 2 chapters.I would say this is an excellent book on the subject matter. This is one of those extremely rare books that when you complete a page and flip, you will never have to flip back to recall. The explanation sticks to your mind perfectly.I think that I have understood many other topics well once I learned a little bit about fourier analysis. Some of the ideas such as convergence of fourier-bessel functions and almost every topic in chapter 9 is very well presented and useful in many other classes where particular books skip (or save pages) on these vital topics.

This book is a must for the beginner and those who want to get their feet wet and beyond. Following the first chapter, lemma's and theorem's explained in the precise and concise fashion. And individuals with background in mathematics and in particular physics are the primary beneficiaries of this book. The thing that I enjoyed most were the related problem's at the end, as the theory of Bessel functions fully lay on the table along with related exercise and APPLICATIONS. As a physicist I have ever hardy encounter any simple book but yet effective. Highly recommended.

A good, thorough treatment of Fourier series and their applications to PDEs. I was impressed by the rigorous, yet clear explanatations. The book is advanced material but very easy to read. Definitely recommended, and it’s very cheap too!

I thought that this book was an excellent introduction for someone with some mathematics background, but no prior knowledge of Fourier Series. The book assumes a knowledge of basic calculus and, of course, a knowledge of some common mathematical notation. I thought that the information was built up in a logical intuitive manner and that it was possible just to read the book (without doing too many exercises with pen and paper) and get a decent sense of how Fourier series worked.

This is a solid and inexpensive book on the subject. There are lots of examples and many exercise solutions. It is useful for self-study to the well motivated.

This book can be used as a reference, or as an introduction to Fourier series. It is clearly written, and gives the rigorous foundation as well as some practical applications of Fourier series.

Linear Operators in Hilbert Space (Dover Books on Mathematics) Invariant Subspaces (Dover Books on Mathematics) Hilbert Space Methods in Partial Differential Equations (Dover Books on Mathematics) Modern Methods in Topological Vector Spaces (Dover Books on Mathematics) Stability Theory of Differential Equations (Dover Books on Mathematics) Geometry, Relativity and the Fourth Dimension (Dover Books on Mathematics)