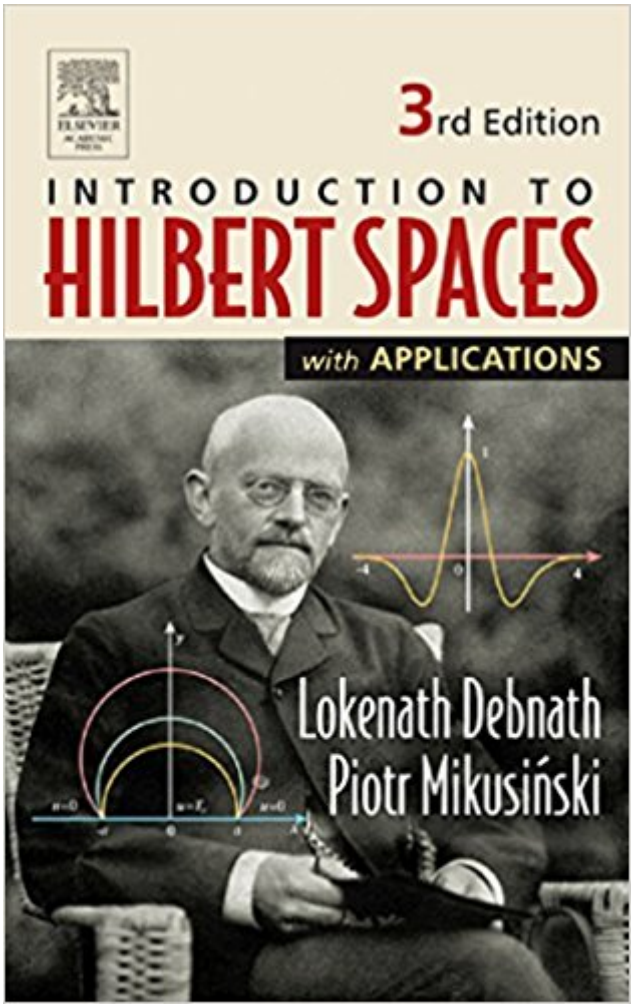
# Introduction To Hilbert Spaces With Applications



## Synopsis

Building on the success of the two previous editions, Introduction to Hilbert Spaces with Applications, Third Edition, offers an overview of the basic ideas and results of Hilbert space theory and functional analysis. It acquaints students with the Lebesgue integral, and includes an enhanced presentation of results and proofs. Students and researchers will benefit from the wealth of revised examples in new, diverse applications as they apply to optimization, variational and control problems, and problems in approximation theory, nonlinear instability, and bifurcation. The text also includes a popular chapter on wavelets that has been completely updated. Students and researchers agree that this is the definitive text on Hilbert Space theory.Updated chapter on waveletsImproved presentation on results and proofRevised examples and updated applicationsCompletely updated list of references

## Book Information

File Size: 36314 KB

Print Length: 600 pages

Publisher: Academic Press; 3 edition (September 29, 2005)

Publication Date: September 29, 2005

Sold by:Â  Digital Services LLC

Language: English

ASIN: B008LQL1H6

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Enabled

Best Sellers Rank: #441,101 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #14 inÂ Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics > Pure Mathematics > Functional Analysis #81 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Set Theory #142 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Functional Analysis

## Customer Reviews

Personally, I consider this a great book to read. It’s a joy to read all the time.This book explains each subject very well. I like the Chapters on Lebesgue Measure and Integration Theory, Hilbert

Spaces and Linear Operators. I rated 5 stars because this book has very clear proofs of every theorem it presents.The authors are well-known professors and mathematicians, and they produce synergy when they work together. I have both editions (old and new), because the new one have better presentation in most of the chapters, and it has new chapters also.I love this book! That's it!I highly recommend this book to any one interested in the subject of Functional Analysis.

this is a very good book it describes and explains very difficult concepts like the lebesgue integral in a very user friendly way.

Nearly brand new book

Lokenath Debnath, like many authors from India, I am finding, write solid mathematical texts. These texts tend to be well-organized, clear, and do not leave out or fail to emphasize important concepts. The proofs are easy to understand. It does not take a week just to read a few pages.This book by Debnath, is a good example of a book fitting the above criteria. It is an excellent book for self-study of Hilbert spaces, Fourier Transforms and other subjects in Functional Analysis. I found it to be a useful supplement to Folland's "Real Analysis" which I used as a 1st-year graduate student in mathematics. In fact, this book saved me a few times, when I had to figure out solutions to difficult homework excercises. One example comes to mind is a homework assignment (I think that it was out of Folland's book) involving Rademacher and Walsh functions, which are covered in this book. I also found this text for useful in studying for my candidacy examination.In summary, this book is would make an excellent addition to your library. (If you are also interested in the subject of elliptic functions, then "Elliptic and Associated Functions with Applications" by Debnath and M. Dutta (World Press Private Ltd., Calcutta, 1965), may interest you. It is, like the above text, excellent, but very difficult to find!)

very nice . just buy one for myself, very fast, receive it next day. Cheap yet works perfectly. Really a solid, sharp (very sharp!) product. My old serrated product disappeared somewhere, but I wish I'd bought this one years ago.

I'm a statistician who has been using Part 1 of this book to teach myself the basics of Hilbert space theory. So far, I've been very pleased with it.I've only run into one argument that assumed a fact that wasn't made fairly plain earlier in the development (for Corollary 4.6.1, I had to resort to Rudin's

Functional Analysis text to learn why everywhere-defined positive operators on Hilbert spaces are bounded). Functional analysis seems to be a subject where you'll want to have a few different texts on hand in case what one author considers obvious is not so obvious to you!Nice features of this book include--an interesting proof of the Banach-Steinhaus theorem that uses a clever Diagonalization Theorem instead of the Baire Category theorem--an entire chapter introducing the Lebesgue integral and developing its properties without auxiliary concepts such as measure: I found this chapter to be an interesting alternative way to look at the Lebesgue integral. My only quibble with it is that it quotes a version of Fatou's lemma that only applies to functions with limits (almost everywhere). In probability theory, Fatou's lemma is often applied on liminf's and limsup's of functions that don't have limits--including the Lebesque integral chapter, a total of four solid chapters that develop the theory systematically and clearly enough for careful readers to follow. These comprise Part 1, which I'm almost finished with.--five chapters with applications. I've only skimmed these, but together they really make this book seem like a terrific value. There's a chapter on applications to integral and differential equations, one on generalized functions and PDEs (e.g. distribution theory), a really interesting looking chapter on Quantum Mechanics, a chapter on wavelets that includes a terrific and concise section with historical remarks and a chapter on optimization problems, including the Frechet and Gateaux differentials, which comprise one of my major motivations for reading this book--answers to selected exercises (HOORAY!)This book can be used as the primary text for people who want to acquire a good understanding of Hilbert space theory so that they can use it to solve applied problems: at least, that's how I'm trying to use it! This book is a good value for scientists and engineers.

this price is valuable. Now that's a product....This is a solid piece of steel... Much more than I expected.... Received as described. arrive on time. in my family it is necessary,

Clearest introduction I know to inner-product spaces.

Space and Quantum Logic (Problem Books in Mathematics) Hilbert Functional Analysis: Entering Hilbert Space: 2nd Edition Theory of Linear Operators in Hilbert Space (Dover Books on Mathematics) A Hilbert Space Problem Book Linear Systems and Operators in Hilbert Space (Dover Books on Mathematics) Hilbert Space Methods in Partial Differential Equations (Dover Books on Mathematics) Einstein Already had it, But He Did not See it: Part 0: The Discarded Term from the Einstein-Hilbert-Action (Einstein had it Book 1) Applications Of Orlicz Spaces (Pure and Applied Mathematics) Introduction to Metric and Topological Spaces (Oxford Mathematics) Nutritional Foundations and Clinical Applications: A Nursing Approach, 5e (Foundations and Clinical Applications of Nutrition) Structural Analysis: With Applications to Aerospace Structures (Solid Mechanics and Its Applications) Encapsulation Technologies for Electronic Applications (Materials and Processes for Electronic Applications) Laboratory Applications in Microbiology: A Case Study Approach: Laboratory Applications in Microbiology: A Case Study Approach