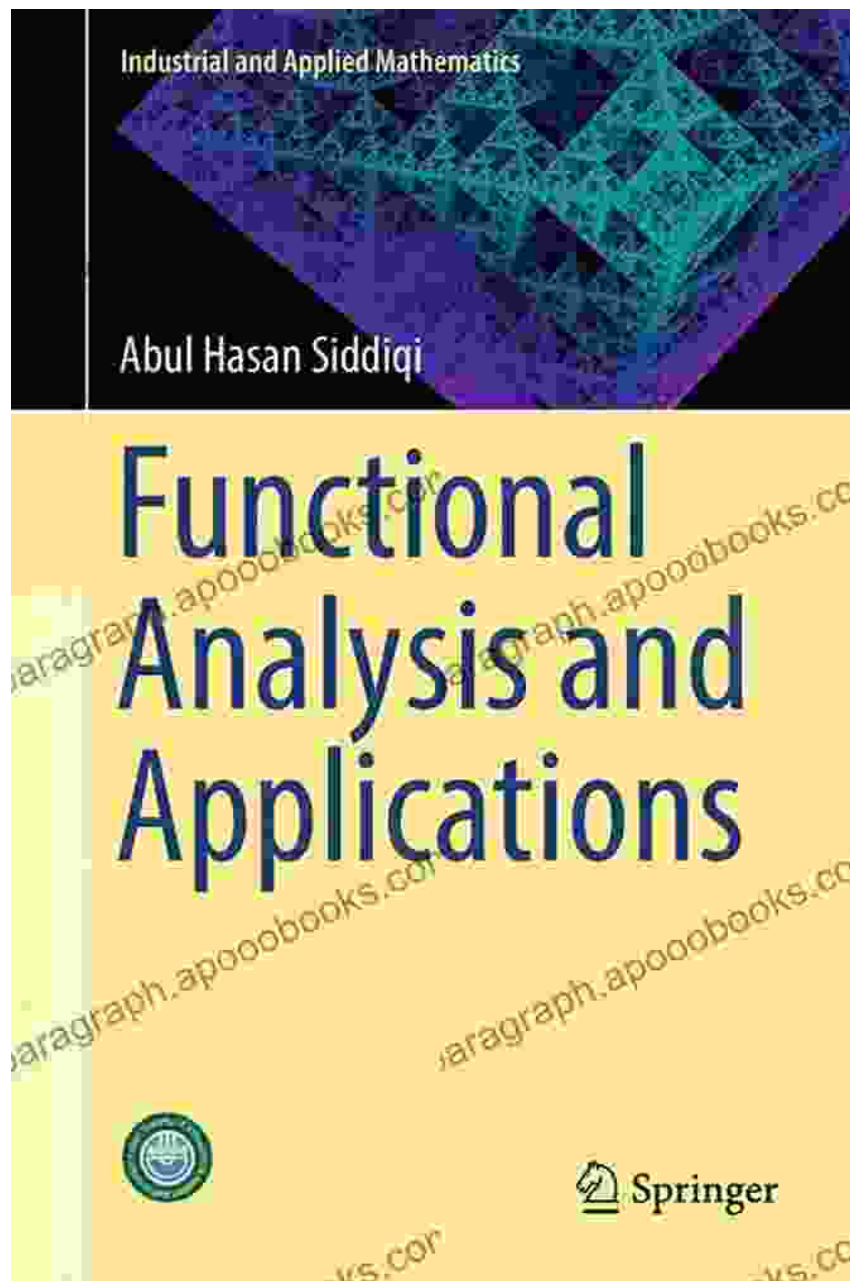# Functional Analysis and Applications Book Review: A Comprehensive Guide to Industrial and Applied Mathematics

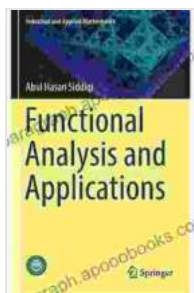**Functional Analysis and Applications in Industrial and Applied Mathematics**

Authors: Vladimir I. Bogachev, Yuriy I. Lyubich, Vladimir I. Macaev

Publisher: CRC Press

Publication Date: 2021

: 9780367363250

Pages: 1016

Functional Analysis and Applications (Industrial and Applied Mathematics) by Virginia Aronson

⭐⭐⭐⭐⭐   5 out of 5

Language	: English
File size	: 8788 KB
Screen Reader	: Supported
Print length	: 579 pages

Functional analysis is a branch of mathematics that deals with the study of spaces of functions. It has applications in many fields of science and engineering, including physics, chemistry, and economics. This book provides a comprehensive to functional analysis with a focus on its applications in industrial and applied mathematics. The book is divided into three parts:

1. **Abstract Analysis**: This part covers the foundational concepts of functional analysis, including normed spaces, Banach spaces, and Hilbert spaces. It also introduces the fundamental theorems of functional analysis, such as the Hahn-Banach theorem and the Riesz representation theorem.

2. **Industrial Applications**: This part explores the applications of functional analysis in industrial settings. It covers topics such as

optimization, control theory, and image processing. It also includes applications in finance, insurance, and medicine.

3. **Applied Mathematics**: This part focuses on the applications of functional analysis in applied mathematics. It covers topics such as partial differential equations, integral equations, and numerical analysis. It also includes applications in fluid dynamics, elasticity, and quantum mechanics.

The book is written in a clear and concise style and is suitable for both undergraduate and graduate students in mathematics, engineering, and other related fields. It is also a valuable resource for researchers and practitioners who use functional analysis in their work. The book includes over 500 exercises and problems to help students understand the concepts and applications of functional analysis.

Overall, this book is a comprehensive and up-to-date to functional analysis with a focus on its applications in industrial and applied mathematics. It is an essential resource for anyone who wants to learn about this field and its applications.

Book Description

The book 'Functional Analysis and Applications in Industrial and Applied Mathematics' by Vladimir I. Bogachev, Yuriy I. Lyubich, and Vladimir I. Macaev is a comprehensive and up-to-date to functional analysis with a focus on its applications in industrial and applied mathematics. The book is divided into three parts:

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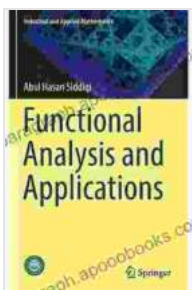
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Key Features

- Comprehensive coverage of the foundational concepts of functional analysis

- Emphasis on applications in industrial and applied mathematics

- Over 500 exercises and problems

- Suitable for undergraduate and graduate students, as well as researchers and practitioners

Table of Contents

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