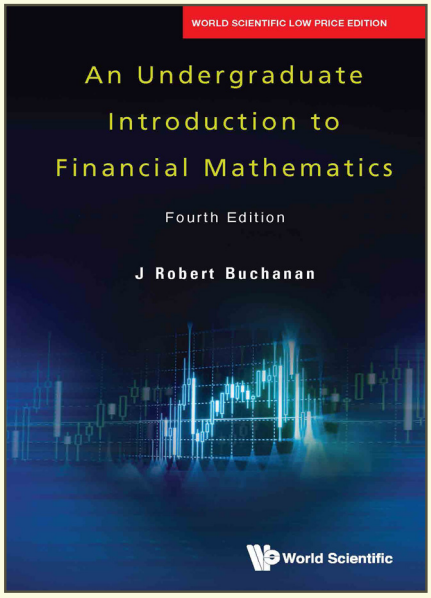
An Undergraduate Introduction to Financial Mathematics, 4th Edition



By **J Robert Buchanan**
(Millersville University, USA)

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ABOUT THE BOOK

Anyone with an interest in learning about the mathematical modeling of prices of financial derivatives such as bonds, futures, and options can start with this book, whereby the only mathematical prerequisite is multivariable calculus. The necessary theory of interest, statistical, stochastic, and differential equations are developed in their respective chapters, with the goal of making this introductory text as self-contained as possible.

In this edition, the chapters on hedging portfolios and extensions of the Black–Scholes model have been expanded. The chapter on optimizing portfolios has been completely re-written to focus on the development of the Capital Asset Pricing Model. The binomial model due to Cox–Ross–Rubinstein has been enlarged into a standalone chapter illustrating the wide-ranging utility of the binomial model for numerically estimating option prices. There is a completely new chapter on the pricing of exotic options. The appendix now features linear algebra with sufficient background material to support a more rigorous development of the Arbitrage Theorem.

The new edition has more than doubled the number of exercises compared to the previous edition and now contains over 700 exercises. Thus, students completing the book will gain a deeper understanding of the development of modern financial mathematics.

READERSHIP

Undergraduate students in finance, economics, actuarial science, and applied mathematics; professionals in banking, insurance, actuarial careers, and finance.

CONTENTS

- Forwards and Futures
- Options
- Approximating Option Prices Using Binomial Trees
- Normal Random Variables of Probability
- Random Walks and Brownian Motion
- Black–Scholes Equation and Option Formulas
- Extensions of the Black–Scholes Model
- Derivatives of Black–Scholes Option Prices
- Hedging
- Exotic Options
- Appendix A: Linear Algebra Primer

ABOUT THE AUTHOR

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