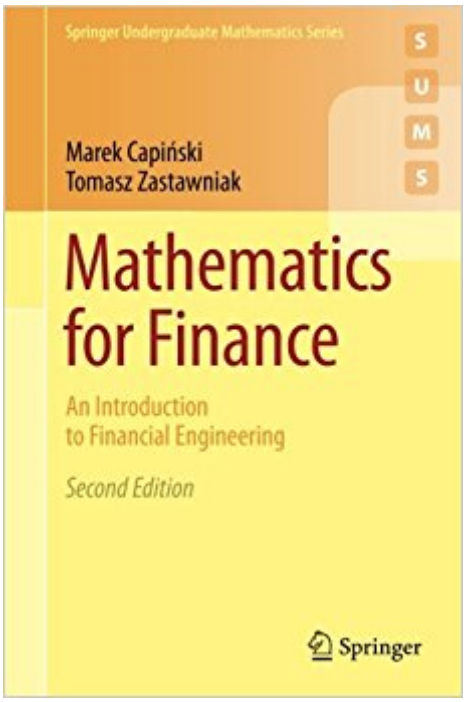
Mathematics For Finance: An Introduction To Financial Engineering (Springer Undergraduate Mathematics Series)



Synopsis

Mathematics for Finance: An Introduction to Financial Engineering combines financial motivation with mathematical style. Assuming only basic knowledge of probability and calculus, it presents three major areas of mathematical finance, namely Option pricing based on the no-arbitrage principle in discrete and continuous time setting, Markowitz portfolio optimisation and Capital Asset Pricing Model, and basic stochastic interest rate models in discrete setting.

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Customer Reviews

From the reviews of the second edition:Ã¢â ¬Å“This second edition Ã¢â ¬Â¦ is to start each chapter with the presentation of a case study and to end each chapter with a thorough discussion of that study. The authors also added new material on time-continuous models, along with the essentials of the mathematical arguments. Ã¢â ¬Â¦ The current book is more substantial Ã¢â ¬Â¦ . Summing Up: Recommended. Upper-division undergraduates and graduate students.Ã¢â ¬Â• (D. Robbins, Choice, Vol. 48 (10), June, 2011)Ã¢â ¬Å“Throughout the text, the authors invite active reader participation. One way is by opening and closing each chapter with a case study. Ã¢â ¬Â¦ authors have embedded all of the exercises in the discussion. Ã¢â ¬Â¦ Solutions to all exercises appear in an appendix. This makes the book excellent for self-study. Ã¢â ¬Â¦ this book provides an excellent introduction to financial engineering. Ã¢â ¬Â¦ authors display impressive dexterity in ushering the reader from basics to an understanding of some of the deepest and most far-reaching ideas in the discipline.Ã¢â ¬Â• (David A. Huckaby, The Mathematical Association of America, February,

2011)Ã¢â ¬Å“This second edition consists of standard topics for undergraduate level financial mathematics courses, plus an introduction to materials from an advanced level course. Ã¢â ¬Â¦ Each chapter starts with a case study and ends with a discussion on it using the material taught in the chapter. In general this book provides many examples and exercises, which is very useful for helping readers to understand the materials covered. Overall this is a great book for upper level undergraduate students and those who want to self-study financial engineering.Ã¢â ¬Â• (Youngna Choi, Mathematical Reviews, Issue 2012 e)Ã¢â ¬Å“This textbook presents Ã¢â ¬Â¦ three major areas of mathematical finance at a level suitable for second or third year undergraduate students in mathematics, business management, finance or economics. Ã¢â ¬Â¦ The text is interspersed with a multitude of elaborated examples and exercises, complete with solutions, providing ample material for tutorials as well as making the book good for self-study.Ã¢â ¬Â• (Yuliya S. Mishura, Zentralblatt MATH, Vol. 1207, 2011)

As with the first edition, Mathematics for Finance: An Introduction to Financial Engineering combines financial motivation with mathematical style. Assuming only basic knowledge of probability and calculus, it presents three major areas of mathematical finance, namely option pricing based on the no-arbitrage principle in discrete and continuous time setting, Markowitz portfolio optimisation and the Capital Asset Pricing Model, and basic stochastic interest rate models in discrete setting.In this second edition, the material has been thoroughly revised and rearranged. New features include:Ã¢â ¬Â¢ A case study to begin each chapter Ã¢â ¬â œ a real-life situation motivating the development of theoretical tools;Ã¢â ¬Â¢ A detailed discussion of the case study at the end of each chapter;Ã¢â ¬Â¢ A new chapter on time-continuous models with intuitive outlines of the mathematical arguments and constructions;Ã¢â ¬Â¢ Complete proofs of the two fundamental theorems of mathematical finance in discrete setting.From the reviews of the first edition:Ã¢â ¬Â•This text is an excellent introduction to Mathematical Finance. Armed with a knowledge of basic calculus and probability a student can use this book to learn about derivatives, interest rates and their term structure and portfolio management.Ã¢â ¬Â•(Zentralblatt MATH)Ã¢â ¬Â•Given these basic tools, it is surprising how high a level of sophistication the authors achieve, covering such topics as arbitrage-free valuation, binomial trees, and risk-neutral valuation.Ã¢â ¬Â• (www.riskbook.com)Ã¢â ¬Â•The reviewer can only congratulate the authors with successful completion of a difficult task of writing a useful textbook on a traditionally hard topic.Ã¢â ¬Â• (K. Borovkov, The Australian Mathematical Society Gazette, Vol. 31 (4), 2004)

book has typos in every chapter, wrong answers in back, jumps from easy problem to super hard. Explanation is deficient. If you do not have a excellent professor whom explains the material, the book is not really useful. The topics are fascinating though.

Well, I think this book explains well the math applied to finance (in the general theory) for feasible analysis of bonds and stock. I guess the title is clear, but for some reason I expected to learn more on the financial side and its applications. I am not sure if the examples in the book reflect real-life situations, subjective probabilities are nothing but an artifact that creates trading transactions...

Good for intermediate level of finance, as it equipped with exercises and examples.

I bought this book soon after it came out in 2004. This book is fairly easy to read and gives understandable definitions and introductions to such concepts as short selling. This authors build up to probabilistic concepts that ultimately find expression in the Black-Sholes equation--which evidently helped glean for its inventors the 1997 Nobel Prize in economics. Actually, I lost much of my interest in this book soon after I realized that it offered no insight on how to assess the risk of individual securities. This book shows you how to assess the risk of a portfolio, but only if you already know the risk of each security in that portfolio. I gather that this problem sunk the world economy in 2008!The mathematical level of this book corresponds to that of an undergraduate who has had a course in probability as well as differential, integral, and multivariable calculus--including a passing acquaintance with differential equations. Certainly any junior-level mathematics, physical sciences, or engineering major would have the mathematics background appropriate for this course. It is also likely a high school student who had aced a year-long calculus course, as well as a math methods course that included probability as a topic, would be able to understand this book.

An undergraduate text.Financial derivatives are the products traded by the financial industry, banks and trading companies; a contract whose payoff depends on the behavior of a benchmark; financial instruments whose value is derived from a number of underlying variables. Examples: futures, options, and swaps ; or other tradable assets, e.g., stocks or commodities; or such non-tradable items such as the temperature (weather derivatives), the unemployment rate, or any kind of (economic) index. Since the industry has undergone a recent explosive growth, so have the number of variety of books covering the subject. As well as programs in financial engineering at universities around the world.The book by Capinski & Zastawniak is aimed at undergraduate courses at the

crossroad of theory and applications, and it should be useful more widely for readers wanting a mathematical introduction.Covered are mathematical tools, arbitrage, assets (from risk-free to risky derivatives), financial valuation, financial models, asset pricing, interest rates.On the math side: Black-Scholes, Ito's lemma, and a systematic presentation of stochastic differential equations; discrete and continuous time models. Monte Carlo simulation.There are other similar books are out there, roughly the same level, and roughly the same emphasis; for example by Willmott-Howison-Dewynne, and by Baz & Chacko.I believe they all serve a very useful purpose. Review by Palle Jorgensen, July 2011.

Shipping takes too long, but the price is a good bargin. Plus, I am not in a hurry since this is the textbook for my course in the next semster. The book is printed with high quality.

Not worth the money, cheap printing and the content is to well explained.

This is a good introduction to the theory side of mathematical finance, with the minimum amount of required higher mathematics. I recomment reading this after getting a non-technical introduction to finance, for example, by readingÃ Â Investments (6th Edition). Also my recommendation is to supplement this text withÃ Â Investment Science. They contain a lot of overlap, but approach the subject in different order.The mathematics requirements for most of the book is just high school algebra and simple discrete probability. The chapter on portfolio theory requires some basic linear algebra. Knowledge of linear algebra will also inhence your understanding of the material on replication in discrete setting, but is not required there. There are two proofs that use some notions of topology (compact spaces), but understanding the proofs is not as important as understanding the statements of the corresponding theorems. One variable calculus pops up once in a while, but mostly through derivatives. Knowledge of differential equations is a plus, but certainly not a requirement.This book will teach you to do arbitrage arguments very well. There is a simple theme here that repeats in almost every argument - if some inequality among prices is assumed to hold, sell the more expensive instrument, and buy a less expensive one. Doing these arbitrage proofs is a good practice, and will help in reading other books. There is some introductory explanations about sigma fields, filtrations, and conditional expectations. These are basic and are only done in discrete setting, but still a good thing to get exposed to before reading more advanced material.What I didn't like about the book is, in my opinion, over-use of examples and a dearth of theoretical exercises. Most of the material is introduced by an example, which is ok. However, some things are left at that,

and no general theory is presented afterwards. It is assumed that you will be able to extrapolate that example to other situations. Because of this I think it is important to work through and understand every example, otherwise you will miss a good chunk of what the authors were trying to get across. Also, most of the exercises are numerical, and just a slight modifications of the examples. There are some theoretical exercises, but I would have liked to see more. The good news is that there are answers with detailed explanations to all the exercises at the end of the book, so it is easy to check your numbers if needed.The one chapter I didn't enjoy reading was on continuous time models. This is a hard area and learning it in a single chapter is impossible, but I think the authors should have spent less time trying to justify the theory of stochastic calculus, and rather just state the most important results and apply them to price various contingent claims. I think Luenberger does a nicer job at introducing this topic.Overall my impression of this book is very positive, and I'm glad that I have worked through it, and would recommend it to any newcomer to the field. After reading this, one could go on to read Shreve, the first volume of which should seem like a review after this book.

and Graph Theory (Springer Undergraduate Texts in Mathematics and Technology) An Undergraduate Introduction to Financial Mathematics (Third Edition) Stochastic Calculus for Finance II: Continuous-Time Models (Springer Finance)