

The book was found

# Lectures On BSDEs, Stochastic Control, And Stochastic Differential Games With Financial Applications (SIAM Series On Financial Mathematics)



## Synopsis

The goal of this textbook is to introduce students to the stochastic analysis tools that play an increasing role in the probabilistic approach to optimization problems, including stochastic control and stochastic differential games. While optimal control is taught in many graduate programs in applied mathematics and operations research, the author was intrigued by the lack of coverage of the theory of stochastic differential games. This is the first title in SIAM's Financial Mathematics book series and is based on the author's lecture notes. It will be helpful to students who are interested in stochastic differential equations (forward, backward, forward-backward); the probabilistic approach to stochastic control (dynamic programming and the stochastic maximum principle); and mean field games and control of McKean-Vlasov dynamics. The theory is illustrated by applications to models of systemic risk, macroeconomic growth, flocking/schooling, crowd behavior, and predatory trading, among others. Audience: This book is written for young researchers and newcomers to stochastic control and stochastic differential games. Contents: Preface; List of Notation; Part I: Stochastic Calculus; Chapter 1: Stochastic Differential Equations; Chapter 2: Backward Stochastic Differential Equations; Part II: Stochastic Control; Chapter 3: Continuous Time Stochastic Optimization and Control; Chapter 4: Probabilistic Approaches to Stochastic Control; Part III: Stochastic Differential Games; Chapter 5: Stochastic Differential Games; Chapter 6: Mean Field Games; Bibliography; Author Index; Subject Index

## Book Information

Series: SIAM Series on Financial Mathematics (Book 1)

Paperback: 275 pages

Publisher: SIAM-Society for Industrial and Applied Mathematics (February 18, 2016)

Language: English

ISBN-10: 1611974232

ISBN-13: 978-1611974232

Product Dimensions: 6.8 x 1.1 x 9.7 inches

Shipping Weight: 1.3 pounds (View shipping rates and policies)

Average Customer Review: Be the first to review this item

Best Sellers Rank: #1,574,739 in Books (See Top 100 in Books) #160 in Books > Science & Math > Mathematics > Applied > Stochastic Modeling #5733 in Books > Science & Math > Mathematics > Applied > Probability & Statistics

[Download to continue reading...](#)

Lectures on BSDEs, Stochastic Control, and Stochastic Differential Games with Financial Applications (SIAM Series on Financial Mathematics) Engineering Uncertainty and Risk Analysis, Second Edition: A Balanced Approach to Probability, Statistics, Stochastic Models, and Stochastic Differential Equations Warriors Word Scramble: Word Scramble Games - Word Search, Word Puzzles And Word Scrambles (Word Games, Brain Games, Word Search, Word Search Games, Word ... Scramble, Word Scrabble, Unscramble Word) Hoyle's Rules of Games: The Essential Family Guide to Card Games, Board Games, Parlor Games, New Poker Variations, and More Nonlinear Programming: Concepts, Algorithms, and Applications to Chemical Processes (MPS-SIAM Series on Optimization) Stochastic Integration in Banach Spaces: Theory and Applications (Probability Theory and Stochastic Modelling) Advanced Mathematics for Engineers with Applications in Stochastic Processes. Aliakbar Montazer Haghighi, Jian-Ao Lian, Dimitar P. Mishev (Mathematics Research Developments) Lectures on Nonlinear Hyperbolic Differential Equations (Mathématiques et Applications) Bencharong: Chinese Porcelain for Siam; Discover Thai Art (Discover Thai Art Series) Ordinary Differential Equations: Analysis, Qualitative Theory and Control (Springer Undergraduate Mathematics Series) Thongchai: Siam Mapped Paper Applied Partial Differential Equations with Fourier Series and Boundary Value Problems (5th Edition) (Featured Titles for Partial Differential Equations) The Game Inventor's Guidebook: How to Invent and Sell Board Games, Card Games, Role-Playing Games, & Everything in Between! Hierarchical Decision Making in Stochastic Manufacturing Systems (Systems & Control: Foundations & Applications) Student Solutions Manual for Differential Equations: Computing and Modeling and Differential Equations and Boundary Value Problems: Computing and Modeling Contact Geometry and Nonlinear Differential Equations (Encyclopedia of Mathematics and its Applications) An Introduction to Differential Equations and Their Applications (Dover Books on Mathematics) Differential Equations and Boundary Value Problems: Computing and Modeling (5th Edition) (Edwards/Penney/Calvis Differential Equations) Applications of Lie Groups to Differential Equations (Graduate Texts in Mathematics) Ferri's Differential Diagnosis: A Practical Guide to the Differential Diagnosis of Symptoms, Signs, and Clinical Disorders, 2e (Ferri's Medical Solutions)

[Dmca](#)