

## The Credit Scoring Toolkit

*Theory and Practice for Retail Credit Risk Management and Decision Automation*

**Raymond Anderson**, Standard Bank Group, Johannesburg

The *Credit Scoring Toolkit* provides an all-encompassing view of the use of statistical models to assess retail credit risk and provide automated decisions.

In eight modules, the book provides frameworks for both theory and practice. It first explores the economic justification and history of Credit Scoring, risk linkages and decision science, statistical and mathematical tools, the assessment of business enterprises, and regulatory issues ranging from data privacy to Basel II. It then provides a practical how-to-guide for scorecard development, including data collection, scorecard implementation, and use within the credit risk management cycle.

Including numerous real-life examples and an extensive glossary and bibliography, the text assumes little prior knowledge making it an indispensable desktop reference for graduate students in statistics, business, economics and finance, MBA students, credit risk and financial practitioners.

August 2007 | 784 pages

978-0-19-922640-5, HARDBACK £80.00/\$160.00

## Arbitrage Theory in Continuous Time

SECOND EDITION

**Tomas Björk**, Stockholm School of Economics

This accessible introduction to the mathematical underpinnings of finance concentrates on the probabilistic theory of continuous arbitrage pricing of financial derivatives, including stochastic optimal control theory, and Merton's fund separation theory. It includes a solved example for every new technique presented, numerous exercises, and a Further Reading list in each chapter. This new edition includes new chapters on measure theory, probability theory, Girsanov transformations, the LIBOR and Swap Market Models, and martingale representations.

March 2004 | 296 pages

978-0-19-927126-9, HARDBACK £37.00/\$89.50

## Credit Risk Management

*Basic Concepts*

**Bart Baesens**, Faculty of ETEW, Katholieke Universiteit Leuven, Belgium, **Tony van Gestel**, Faculty of ETEW, Katholieke Universiteit Leuven, Belgium, and **Lyn Thomas**, School of Management, University of Southampton

*Credit Risk Management: Basic Concepts* is the first book of a series of three which will cover all aspects, steps, and issues that should be considered in credit risk management, including the Basel II accord, which all major banks must comply with in 2008.

This first book lays the foundations of CRM, defining the basic risk concepts and providing an overview of a risk modelling process. It provides a thorough introduction to financial risk management, an area of increasing importance with the recent Basel II developments and the increasing profitability competition.

June 2008 | 500 pages

978-0-19-954511-7, HARDBACK £65.00

FORTHCOMING DECEMBER 2008

## Roger Penrose: Collected Works

Professor Sir Roger Penrose is one of the truly original thinkers of our time and has made several remarkable contributions to science from quantum physics and theories of human consciousness to relativity theory and observations on the structure of the universe in over 240 scientific publications. Here his works, spanning 50 years of science, will be collected and arranged chronologically between over six volumes.

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**M.J. Shai Haran**, Technion-Israel Institute of Technology, Haifa, Israel

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Zentralblatt Math

Highly topical and original monograph, introducing the author's work on the Riemann zeta function and its adelic interpretation of interest to a wide range of mathematicians and physicists.

London Mathematical Society Monographs No. 25

2001 | 254 pages

978-0-19-850868-7, HARDBACK £67.00/\$161.00

## Introduction to Local Spectral Theory

**Kjeld Laursen**, Department of Mathematics, University of Copenhagen, Denmark, and **Michael Neumann**, Department of Mathematics, Mississippi State University, USA

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Journal of Operator Theory

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London Mathematical Society Monographs No. 20

2000 | 604 pages

978-0-19-852381-9, HARDBACK £128.00/\$307.50

## Integrability, Self-duality, and Twistor Theory

**L. J. Mason** and **N. M. J. Woodhouse**, both at Mathematical Institute, Oxford

'Anybody working in integrable systems or in twistor constructions will want a copy of this book or at least want it in their Library.'

Proceedings of the Edinburgh Mathematical Society 1998, 41

London Mathematical Society Monographs No. 15

1996 | 374 pages

978-0-19-853498-3, HARDBACK £86.00/\$206.50

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**Yvonne Choquet-Bruhat**, Université Pierre et Marie Curie

General Relativity has passed all experimental and observational tests to model the motion of isolated bodies with strong gravitational fields, though the mathematical and numerical study of these motions is still in its infancy. Aimed at researchers in mathematics and physics, this monograph, in which the author overviews the basic ideas in General Relativity, introduces the necessary mathematics and discusses some of the key open questions in the field.

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**Charles Boyer** and **Krzysztof Galicki**, both at University of New Mexico

This book is an extensive monograph on Sasakian manifolds, focusing on the intricate relationship between Kähler and Sasakian geometries. The subject is introduced by discussion of several background topics, including the theory of Riemannian foliations, compact complex and Kähler orbifolds, and the existence and obstruction theory of Kähler-Einstein metrics on complex compact orbifolds.

October 2007 | 614 pages

978-0-19-856495-9, HARDBACK £75.00/\$149.00

### The Theory of Infinite Soluble Groups

**John C. Lennox**, Research Fellow, Green College and Visiting Fellow, the Mathematical Institute, Oxford University, and **Derek J. S. Robinson**, Professor of Mathematics, University of Illinois, Urbana, Illinois, USA

Aimed at research students and academic algebraists and group theorists, the central concept in this book is that of a soluble group—a group which is built up from abelian groups by repeatedly forming group extensions. This monograph covers all the major areas including finitely generated soluble groups, soluble groups of finite rank, modules over group rings, algorithmic problems, applications of cohomology, finitely presented groups, whilst remaining fairly strictly within the boundaries of soluble group theory.

2004 | 458 pages

978-0-19-850728-4, HARDBACK £91.00/\$218.50

### Operator Algebras and Their Modules

*An Operator Space Approach*

**David P. Blecher**, Department of Mathematics, University of Houston, and **Christian Le Merdy**, Laboratoire de Mathématiques, Université de Besançon

An invaluable reference tool.

London Mathematical Society Monographs No. 30

2004 | 398 pages

978-0-19-852659-9, HARDBACK £103.00/\$184.50

OXFORD MATHEMATICAL MONOGRAPHS

BIOGRAPHY

**Danny Calegari**

Danny Calegari is a Professor of Mathematics at the California Institute of Technology. He was an undergraduate at the University of Melbourne, where he majored in English and Psychology, before coming to do a PhD at the University of California in Berkeley, studying under Andrew Casson and (informally) Bill Thurston. His thesis was on the interactions of taut foliations and geometric structures on 3-manifolds. He taught as an Assistant Professor at Harvard for two years before coming to Caltech. He is the recipient of a Sloan Research Fellowship, and has worked as a consultant for Microsoft Research, and been a Visiting Professor at the Tokyo Institute of Technology. Mathematically, he is mainly interested in geometry, dynamics and topology in low dimensions, and in geometric group theory. His mathematical work includes (with David Gabai) a proof of Marden's 'Tameness Conjecture', which describes the topology of hyperbolic 3-manifolds with finitely generated fundamental group; (with Koji Fujiwara) a discovery of a universal 'spectral gap' for the first accumulation point of stable commutator length in word hyperbolic groups, a kind of homological version of Margulis' Lemma; (with Nathan Dunfield) the construction of the first examples of hyperbolic 3-manifolds without pseudo-Anosov flows or tight essential laminations; and (with Mike Freedman and Kevin Walker), a proof of positivity of the universal unitary 2+1 dimensional TQFT pairing, and the associated 'topological Cauchy-Schwarz inequality'.



**Foliations and the Geometry of 3-Manifolds**

Danny Calegari, California Institute of Technology

This unique reference, aimed at research topologists, gives an exposition of the 'pseudo-Anosov' theory of foliations of 3-manifolds. This theory generalizes Thurston's theory of surface automorphisms and reveals an intimate connection between dynamics, geometry and topology in 3 dimensions. Significant themes returned to throughout the text include the importance of geometry, especially the hyperbolic geometry of surfaces, the importance of monotonicity, especially in 1-dimensional and co-dimensional dynamics, and combinatorial approximation, using finite combinatorial objects such as train-tracks, branched surfaces and hierarchies to carry more complicated continuous objects.



May 2007 | 378 pages

978-0-19-857008-0, HARDBACK

£60.00/\$120.00

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Juan Luis Vazquez, Universidad Autónoma de Madrid

This monograph provides a systematic and comprehensive presentation of the mathematical theory of the nonlinear heat equation usually called the Porous Medium Equation. Each chapter is supplied with a section of notes providing comments, historical notes or recommended reading, and exercises for the reader.

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£63.00/\$110.00

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Daniel Huybrechts, Mathematisches Institut, Universität Bonn

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Marcello Bernardara, Zentralblatt MATH Vol 1095

This seminal text by a leading researcher is based on a course given at the Institut de Mathématiques de Jussieu. Aimed at students with a basic knowledge of algebraic geometry, the key aspect of this book is the derived category of coherent sheaves on a smooth projective variety. Full proofs are given and exercises aid the reader throughout.

2006 | 280 pages

978-0-19-929686-6, HARDBACK

£50.00/\$99.50

**The Fourth Janko Group**

Alexander A. Ivanov, Imperial College, London

'This book can be recommended to anyone interested in the geometrics behind sporadic simple groups.'

EMS Newsletter

This unique reference illustrates how different methods of finite group theory including representation theory, cohomology theory, combinatorial group theory and local analysis are combined to construct one of the last of the sporadic finite simple groups—the fourth Janko group  $J_4$ .

2004 | 250 pages

978-0-19-852759-6, HARDBACK

£69.00/\$124.50

**Hilbert Modular Forms and Iwasawa Theory**

Haruzo Hida, University of California, Los Angeles

The 1995 work of Wiles and Taylor-Wiles opened up a whole new technique in algebraic number theory and, a decade on, the waves caused by this incredibly important work are still being felt. This book, by a leading researcher, covers both this general area and that of Iwasawa Theory, which is currently enjoying a resurgence in popularity.

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