

# **Mathematics, Statistics, Physics & Astronomy**

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January to April 2023

## Table of Contents

### Mathematics

|                                    |   |
|------------------------------------|---|
| Applied Mathematics                | 1 |
| Calculus                           | 3 |
| General & Introductory Mathematics | 4 |

### Physics & Astronomy

|                               |   |
|-------------------------------|---|
| Astronomy & Astrophysics      | 5 |
| Condensed Matter              | 5 |
| Nuclear & High Energy Physics | 6 |
| Optics & Photonics            | 7 |

### Sciences

|                                |   |
|--------------------------------|---|
| General & Introductory Physics | 7 |
|--------------------------------|---|

### Statistics

|                                  |    |
|----------------------------------|----|
| Applied Probability & Statistics | 11 |
| Data Analysis                    |    |
| Data Mining Statistics           |    |

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# Mathematical Foundation of Fuzzy Sets

Hsien-Chung Wu

## Summary

*Mathematical Foundation of Fuzzy Sets* addresses both GRS and GMSE, although with a much stronger emphasis on the former. For completeness, this book begins with a review of shear strength of soils and classical earth pressure theories. The load-deformation behaviour of GRS mass as a composite, reinforcing mechanisms of GRS, and GRS walls with different types of facing, are then covered, followed by the use of geosynthetics as reinforcement. Design concepts with examples are also fully covered, as is the construction of GRS walls, including construction procedures and general construction guidelines.

Wiley  
9781119981527  
Pub Date: 3/13/23  
\$135.00 USD  
Hardcover  
  
448 Pages  
Mathematics / Applied

# The Opportunity Index

**A Solution-Based Framework to Dismantle the Racial Wealth Gap**

Gavin Lewis

## Summary

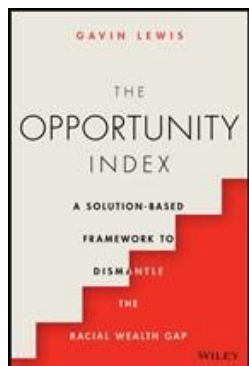
**A bold and fresh perspective unravelling the economics of racial inequality**

In *The Opportunity Index*, BlackRock Managing Director and co-founder of the #Talkaboutblack movement, Gavin Lewis, skillfully plots the origins of the racial wealth gap and its impact on the inequalities faced by the Black community today. Weaving a personal and at times moving narrative through some of the most disruptive events of our time, he offers a blueprint for businesses and individuals to understand the risks and opportunities presented by inequality and issues an urgent call to action.

*The Opportunity Index* also presents:

- A root cause-oriented and solutions-focused exploration of the racial wealth gap and its role in social, health, and opportunity inequality
- A perspective that moves beyond the typical workplace discussion to explore the deeper truths about society and the role of capitalism
- The lessons learned from the #BlackLivesMatter, #MeToo, and climate change movements and how these provide case studies for real and lasting change

An eye-opening and insightful treatment of what equity and access mea...

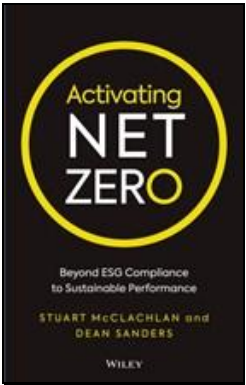


Wiley  
9781119840763  
Pub Date: 3/1/23  
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Hardcover  
  
240 Pages  
Business & Economics /  
Personal Finance

## Activating Net Zero

### Driving Sustainability in Business

Stuart McLachlan, Dean Sanders

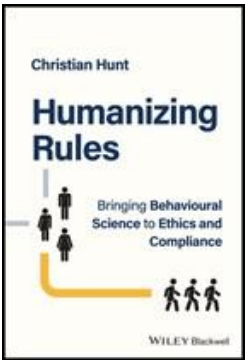


Wiley  
9781394177417  
Pub Date: 4/24/23  
\$24.95 USD  
Hardcover  
  
300 Pages  
Business & Economics /  
Environmental Economics

## Humanizing Rules

### Bringing Behavioural Science to Ethics and Compliance for Business Success

C Hunt



Wiley  
9781394177400  
Pub Date: 5/1/23  
\$24.95 USD  
Hardcover  
  
256 Pages  
Mathematics / Applied

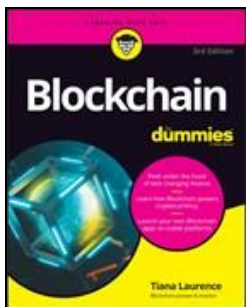
### Summary

This book is designed to help all those involved in managing human risk to achieve 'compliance' with a small 'c' - in other words, getting their desired outcome - and explores how organisations can get the best out of their people by designing frameworks that work with, rather than against, the grain of human thinking. Readers will learn to challenge their existing presumptions about managing human risk and discover practical techniques and examples they can deploy in their work environment.

### Contributor Bio

Christian Hunt is the founder of Human Risk. He is an experienced keynote speaker, trainer and senior-level adviser.

Christian specialises in engaging virtual audiences by delivering compelling content. He provides thought leadership on human risk in his writing and as host and producer of the 'Human Risk' podcast and video channel.



## Blockchain For Dummies (3rd Edition)

Laurence

### Summary

#### Carve out your niche in the exploding world of blockchain technology

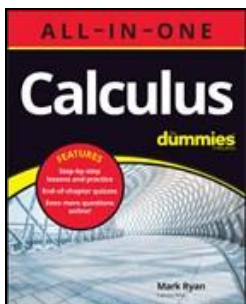
Cryptocurrency, NFTs, smart contracts, and ever-more-important business and finance functions—they all run on blockchain. *Blockchain For Dummies* is the must-have guide to the basics of blockchain. This clear reference breaks down exactly what blockchain technology is, how it's used across industries, and what it all means for you and your investment portfolio. Learn the latest token standards, emerging tools and platforms, and opportunities that you'll want to hop aboard. This book demystifies all of it, so you can understand and profit from this major disruptor in the world of finance. Evaluate new ideas and trends, make smarter decisions, and establish your presence on your blockchains of choice.

- Peek under the hood of the new tech that's changing finance (and everything else)
- Learn how blockchain powers cryptocurrency and smart contracts
- Launch your own blockchain apps on stable platforms
- Understand and take advantage of blockchain investment opportunities

Investors, financial pros, and technologists who need Blockchai...

For Dummies  
9781394159666  
Pub Date: 4/11/23  
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Business & Economics /  
Personal Finance



## Calculus AIO FD (+ Chapter Quizzes Online)

Mark Ryan

### Summary

#### Make calculus more manageable with simplified instruction and tons of practice

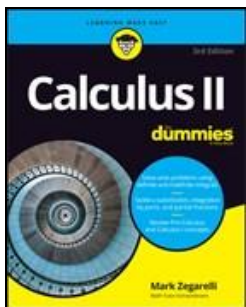
*Calculus All-in-One For Dummies* pairs no-nonsense explanations of calculus content with practical examples and practice problems, so you can untangle the difficult concepts and improve your score in any calculus class. Plus, this book comes with access to chapter quizzes online. Dummies makes differentiation, integration, and everything in between more manageable, so you can crush calculus with confidence. Review the foundational basics, then dive into calc lessons that track your class. This book takes you through a full year of high-school calculus or a first semester of college calculus, only explained more clearly.

- Work through easy-to-understand lessons on everything in a typical calc class
- Get the score you want and need on standardized tests like AP Calculus
- Access online chapter quizzes for additional practice
- Untangle tricky problems and discover clever ways to solve them

With clear definitions, concise explanations, and plenty of helpful information on everything from limits and vectors to integration ...

For Dummies  
9781119909675  
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\$39.99 USD  
Paperback

624 Pages  
Mathematics / Calculus



## Calculus II For Dummies (3rd Edition)

Mark Zegarelli

### Summary

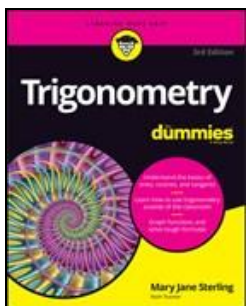
**The easy (okay, easier) way to master advanced calculus topics and theories**

*Calculus II For Dummies* will help you get through your (notoriously difficult) calc class—or pass a standardized test like the MCAT with flying colors. Calculus is required for many majors, but not everyone's a natural at it. This friendly book breaks down tricky concepts in plain English, in a way that you can understand. Practical examples and detailed walkthroughs help you manage differentiation, integration, and everything in between. You'll refresh your knowledge of algebra, pre-calc and Calculus I topics, then move on to the more advanced stuff, with plenty of problem-solving tips along the way.

- Review Algebra, Pre-Calculus, and Calculus I concepts
- Make sense of complicated processes and equations
- Get clear explanations of how to use trigonometry functions
- Walk through practice examples to master Calc II

Use this essential resource as a supplement to your textbook or as refresher before taking a test—it's packed with all the helpful knowledge you need to succeed in Calculus II.

For Dummies  
9781119986614  
Pub Date: 4/18/23  
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400 Pages  
Mathematics / Calculus



## Trigonometry For Dummies (3rd Edition)

Sterling

### Summary

**Make trigonometry as easy as 1-2-3**

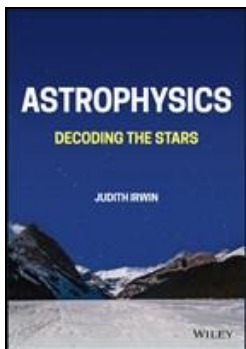
Believe it or not, trigonometry is easier than it looks! With the right help, you can breeze through your next trig class, test, or exam and be ready for your next math challenge. In *Trigonometry For Dummies*, you'll learn to understand the basics of sines, cosines, and tangents, graph functions, solve tough formulas, and even discover how to use trig *outside* the classroom in some cool and interesting ways.

Ditch the confusing jargon and take a plain-English tour of one of the most useful disciplines in math. In this lifesaving guide, you'll learn how to:

- Graph trig functions, including sine, cosine, tangent, and cotangent functions
- Understand inverse trig functions and solve trig equations
- Relate triangles to circular functions and get a handle on basic identities

So, whether you're looking for an easy-to-use study guide, to boost your math grade, or get a refresher on some basic trig concepts after a long absence from studying, *Trigonometry For Dummies* is your ticket to understanding the mathematical mysteries of the triangle.

For Dummies  
9781394168552  
Pub Date: 3/8/23  
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Paperback  
Mathematics / Trigonometry



## Astrophysics

### Decoding the Stars

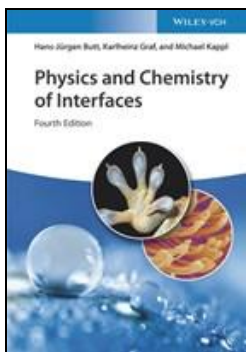
Judith Ann Irwin

#### Summary

*Decoding the Stars* is a companion volume to *Astrophysics – Decoding the Cosmos* from astrophysics teacher and researcher, Professor Judith Irwin. In this new book she presents an accessible, student-friendly guide to the key theories and principles of the scientific framework of stars presenting a close connection between observation and theory. Stellar astrophysics is a discipline with active, dynamic and engaging research being carried out today and this text provides students with an easy-to-read foundation course in the subject.

There will be many examples in this text which illustrate the important physics in a process and provide much useful information, without resorting to numerical calculations.

Wiley  
9781119623557  
Pub Date: 5/22/23  
\$62.00 USD  
Hardcover  
  
328 Pages  
Science / Space Science



## Physics and Chemistry of Interfaces (4th Edition)

Hans-Jürgen Butt, Karlheinz Graf, Michael Kappl

#### Summary

**Comprehensive textbook on the interdisciplinary field of interface science, fully updated with new content on spectroscopy, nonlinear effects, and coatings**

*Physics and Chemistry of Interfaces* provides a comprehensive introduction to the field of surface and interface science, focusing on essential concepts rather than specific details, and on intuitive understanding rather than convoluted math. Numerous high-end applications from surface technology, biotechnology, and microelectronics are included to illustrate and help readers easily comprehend basic concepts.

The new edition contains an increased number of problems with detailed, worked solutions, making it ideal as a self-study resource. In topic coverage, the highly qualified authors take a balanced approach, discussing advanced interface phenomena in detail while remaining comprehensible. Chapter summaries with the most important equations, facts, and phenomena are included to aid the reader in information retention.

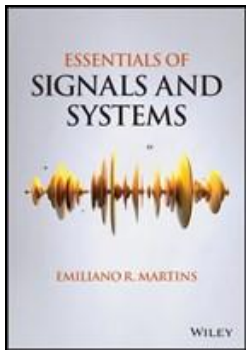
A few of the sample topics included in *Physics and Chemistry of Interfaces* are as follows:

- Liquid surfaces, covering ...

#### Contributor Bio

**Hans-Jürgen Butt** is Director at the Max Planck Institute of Polymer Research in Mainz, Germany. His research topics include surface forces and wetting. **Karlheinz Graf** is Professor for Physical Chemistry at the University of Applied Sciences (Hochschule Niederrhein) in Krefeld. **Michael Kappl** is group leader at the Max Planck Institute for Polymer Research. He investigates the adhesion and friction of micro- and nanocontacts and capillary forces.

Wiley-VCH  
9783527414055  
Pub Date: 4/24/23  
\$95.95 USD  
Paperback  
  
480 Pages  
Science / Physics



## Essentials of Signals and Systems

Emiliano R. Martins

### Summary

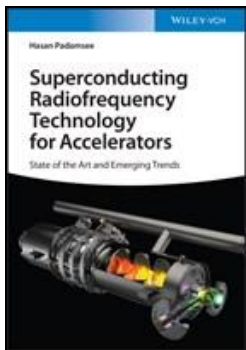
**Novel approach to the theory of signals and systems in an introductory, accessible textbook**

Signals and Systems have a reputation of being a difficult subject. *Essentials of Signals and Systems* is a standalone textbook aiming to change this reputation with a novel approach to this subject, teaching the essential concepts of signals and systems in a clear, friendly, intuitive, and accessible way.

The overall vision of the book is that traditional approaches to signals and systems are unnecessarily convoluted, and that students' learning experiences are much improved by making a clear connection between the theory of representation of signal and systems, and the theory of representation of vectors and matrices in linear algebra. The author begins by reviewing the theory of representation in linear algebra, emphasizing that vectors are represented by different coordinates when the basis is changed, and that the basis of eigenvectors is special because it diagonalizes the operator. Thus, in each step of the theory of representation of signals and systems, the author shows the analogous ste...

Wiley  
9781119909217  
Pub Date: 6/12/23  
\$74.95 USD  
Paperback

336 Pages  
Science / Physics



## Superconducting Radiofrequency Technology for Accelerators

**State of the Art and Emerging Trends**

Hasan Padamsee

### Summary

**Single source reference enabling readers to understand and master state-of-the-art accelerator technology**

*Superconducting Radiofrequency Technology for Accelerators* provides a quick yet thorough overview of the key technologies for current and future accelerators, including those projected to enable breakthrough developments in neutrino research and quantum computing.

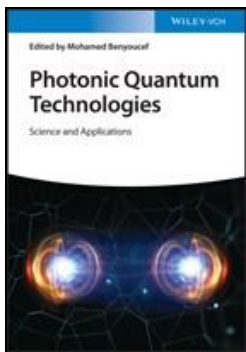
The work is divided into three sections. The first part covers new techniques such as nitrogen doping, nitrogen infusion, oxide-free niobium, new surface treatments, and magnetic flux expulsion, complemented by discussions of the physics of the improvements stemming from diagnostic techniques and surface analysis as well as from theory. The second part reviews the on-going applications of RF superconductivity in already operational facilities and those under construction such as light sources, proton accelerators, neutron and neutrino sources, ion accelerators, and crab cavity facilities. The third part discusses planned accelerator projects such as the International Linear Collider, the Future Circular Collider, the Chin...

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Hardcover

352 Pages  
Science / Physics

### Contributor Bio

**Hasan Padamsee** has published two books on radiofrequency (RF) superconductivity and one popular physics book, *Unifying the Universe*. After obtaining his PhD from Northeastern University, Boston, Massachusetts, he spent most of his career leading the RF Superconductivity Program at Cornell, before becoming Head of the Technical Division and Chief Technology Officer at Fermilab. At Cornell he launched the TeV Energy Superconducting Linear Accelerator (TESLA) which subsequently morphed into the International Linear Collider (ILC).



Wiley-VCH  
9783527414123  
Pub Date: 5/22/23  
\$185.00 USD  
Hardcover

500 Pages  
Science / Physics

## Photonic Quantum Technologies

### Science and Applications

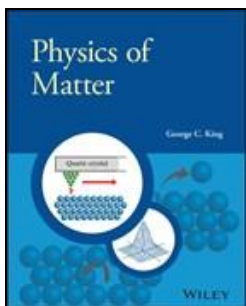
M Benyoucef

### Summary

The book reviews cutting-edge research in photonic quantum technologies and bridges fundamentals of the field with the already available experimental implementations and practical applications of quantum systems.

### Contributor Bio

**Mohamed Benyoucef** is group leader at the University of Kassel, Germany. He is actively involved in a research network related to quantum communication and quantum technology, and his research focuses on the development of novel and advanced quantum nanoarchitectures, integration of III-V semiconductor light sources in silicon, as well as investigating molecule complexes and their integration in solid-state platforms as hybrid quantum systems for applications in quantum technology.



## Physics of Matter

GC King

Wiley-Blackwell  
9781119468585  
Pub Date: 7/7/22  
\$70.00 USD  
Paperback

328 Pages

# Fundamentals of Practical Reliability Engineering

Fuqing Yuan

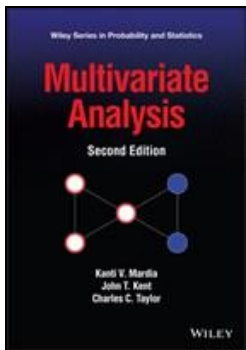
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Medical / Biostatistics  
Series: Performability  
Engineering Series

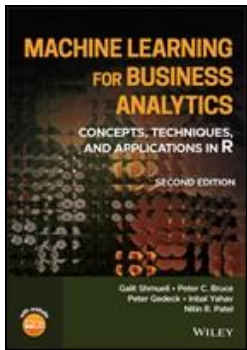
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## Multivariate Analysis (2nd Edition)

KV Mardia



Wiley  
9781118738023  
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Hardcover  
  
528 Pages  
Mathematics / Probability &  
Statistics  
Series: Wiley Series in  
Probability and Statistics



## Machine Learning for Business Analytics (2nd Edition)

Concepts, Techniques, and Applications in R

Shmueli

### Summary

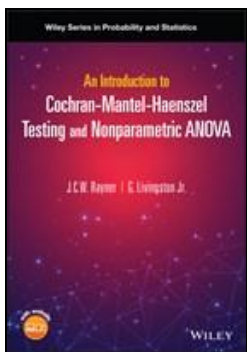
Machine learning —also known as data mining or data analytics— is a fundamental part of data science. It is used by organizations in a wide variety of arenas to turn raw data into actionable information.

Machine Learning for Business Analytics: Concepts, Techniques, and Applications in R provides a comprehensive introduction and an overview of this methodology. This best-selling textbook covers both statistical and machine learning algorithms for prediction, classification, visualization, dimension reduction, rule mining, recommendations, clustering, text mining, experimentation and network analytics. Along with hands-on exercises and real-life case studies, it also discusses managerial and ethical issues for responsible use of machine learning techniques.

This is the second R edition of Machine Learning for Business Analytics. This edition also includes:

- A new co-author, Peter Gedeck, who brings over 20 years of experience in machine learning using R
- An expanded chapter focused on discussion of deep learning techniques
- A new chapter on experimental...

Wiley  
9781119835172  
Pub Date: 2/1/23  
\$109.00 USD  
Hardcover  
  
672 Pages  
Computers / Data Science



## An Introduction to Cochran-Mantel-Haenszel Testing and Nonparametric ANOVA

John C. W. Rayner, Glen C. Livingston

### Summary

**Complete reference for applied statisticians and data analysts that uniquely covers the new statistical methodologies that enable deeper data analysis**

*An Introduction to Cochran-Mantel-Haenszel Testing and Nonparametric ANOVA* provides readers with powerful new statistical methodologies that enable deeper data analysis. The book offers applied statisticians an introduction to the latest topics in nonparametrics. The worked examples with supporting R code provide analysts the tools they need to apply these methods to their own problems.

Co-authored by an internationally recognised expert in the field and an early career researcher with broad skills including data analysis and R programming, the book discusses key topics such as:

- NP ANOVA methodology
- Cochran-Mantel-Haenszel (CMH) methodology and design
- Latin squares and balanced incomplete block designs
- Parametric ANOVA F tests for continuous data
- Nonparametric rank tests (the Kruskal-Wallis and Friedman tests)
- CMH MS tests for the nonparametric analysis of categorical response data

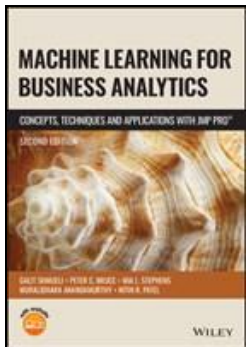
Applied statisticians and data analysts, as well as students an...

### Contributor Bio

**John Charles William Rayner** is an Honorary Professorial Fellow, National Institute for Applied Statistics Research Australia, University of Wollongong, and Conjoint Professor of Statistics, School of Mathematical and Physical Sciences, University of Newcastle, Australia.

**Glen Livingston, Jr.** is a Lecturer. School of Mathematical and Physical Sciences. University of Newcastle.

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240 Pages  
Mathematics / Probability & Statistics  
Series: Wiley Series in Probability and Statistics



## Machine Learning for Business Analytics (2nd Edition)

### Concepts, Techniques and Applications with JMP Pro

Galit Shmueli, Peter C. Bruce, Mia L. Stephens, Muralidhara A., Nitin R. Patel

#### Summary

##### An up-to-date introduction to a market-leading platform for data analysis and machine learning

Machine learning is the process by which computer algorithms can be made progressively more effective through the accumulation of data and experience. A subset of artificial intelligence, it is an increasingly powerful business tool, driving ever more refined data analysis and decision-making. In recent years, JMP Pro® has emerged as one of the most effective and widely-used commercial analysis and data mining tools on the market, using machine learning to produce automated solutions to a range of data analysis needs.

*Machine Learning for Business Analytics: Concepts, Techniques and Applications with JMP Pro®, 2<sup>nd</sup> ed.* offers an accessible and engaging introduction to machine learning using this market-leading software. It provides concrete examples and case studies to educate new users and deepen existing users' understanding of their data and their business. Fully updated to incorporate new topics and instructional material, this remains the only comprehensive introduction to this crucial se...

#### Contributor Bio

**Galit Shmueli, PhD** is Distinguished Professor at National Tsing Hua University's Institute of Service Science. She has designed and instructed business analytics courses since 2004 at University of Maryland, Statistics.com, The Indian School of Business, and National Tsing Hua University, Taiwan.

**Peter C. Bruce** is Founder of the Institute for Statistics Education at Statistics.com, and Chief Learning Officer at Elder Research, Inc.

**Mia L. Stephens, M.S.** is an Advisory Product Manager with JMP, driving the product vision and roadmaps for JMP® and JMP Pro®.

**Muralidhara Anandamurthy, PhD** is an Academic Ambassador with JMP, overseeing technical support for

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Mathematics / Probability & Statistics



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