

A glowing plasma ball with vibrant pink and blue filaments of light. The ball is spherical and filled with a complex network of thin, branching lines of light that create a dynamic, almost organic pattern. The colors transition from bright pink at the edges to deep blue in the center. The background is dark, making the glowing ball stand out prominently.

Routledge

Physics
Textbook Catalogue
Spring 2026

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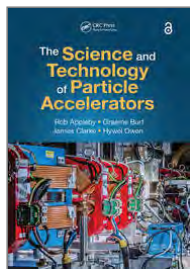
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The Science and Technology of Particle Accelerators



Rob Appleby, Graeme Burt, James Clarke, Hywel Owen

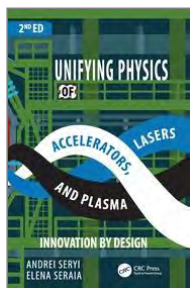
This book provides integrated coverage of accelerator science and technology, this book presents the fundamental concepts alongside detailed engineering discussions and extensive practical guidance, including many numerical examples. For each topic, the authors provide a description of the physical principles, a guide to the practical application of those principles, and a discussion of how to design the components that allow the application to be realised.

CRC Press
August 2022 : 318pp
Pb: 978-1-032-39984-3 : **£50.99**
Hb: 978-1-138-49987-4 : **£140**
eBook: 978-1-351-00796-2

* For full contents and more information, visit: www.routledge.com/9781032399843

2ND EDITION

Unifying Physics of Accelerators, Lasers and Plasma



Andrei Seryi John Adams Institute for Accelerator Science, University of Oxford, UK, **Elena Seraia**

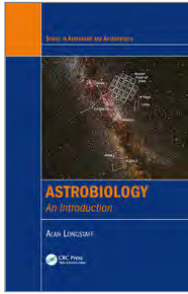
Unifying Physics of Accelerators, Lasers and Plasma outlines a path from idea to practical implementation of scientific and technological innovation. This second edition has been updated throughout, with new content on superconducting technology, linacs, energy recovery, polarization, various topics of advanced technology, etc., making it relevant for the Electron-Ion Collider project, as well as for advanced light sources, including energy recovery-based FELs.

CRC Press
March 2023 : 450pp
Pb: 978-1-032-35250-3 : **£65.99**
Hb: 978-1-032-35035-6 : **£160**
eBook: 978-1-003-32607-6

* For full contents and more information, visit: www.routledge.com/9781032352503

Astrobiology

An Introduction



Alan Longstaff

Series: Series in Astronomy and Astrophysics

This textbook provides a full introduction to astrobiology suitable for university students at all levels. Reflecting a multiscience approach, the text covers topics such as stellar evolution, cosmic chemistry, planet formation, habitable zones, terrestrial biochemistry, and exoplanetary systems. The book discusses the origin, evolution, distribution, and future of life in the universe in an accessible manner, sparing calculus, curly arrow chemistry, and modeling details. It contains problems and worked examples, and includes a solutions manual with qualifying course adoption.

CRC Press

March 2021 : 468pp

Pb: 978-0-367-78370-9 : **£50.99**

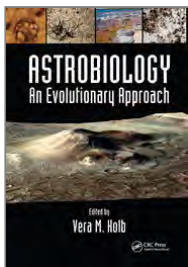
Hb: 978-1-439-87576-6 : **£105**

eBook: 978-0-429-15369-3

* For full contents and more information, visit: www.routledge.com/9780367783709

Astrobiology

An Evolutionary Approach



Edited by **Vera M. Kolb** Department of Chemistry,
University of Wisconsin-Parkside, USA

Series: Series in Astrobiology

This book provides a full course in astrobiology with an emphasis on abiogenesis and evolution. It presents astrobiology both as a developing science and as the science of the future. The book begins with an overview of astrobiology, the origin of elements, and the formation of the solar system, planets, and exoplanets. Other topics covered include prebiotic synthesis of biochemical compounds, transition from abiotic to biotic, microorganisms in space, the roles of silicon in life, encapsulation of organic materials in protocells, cold and dry limits of life, virolution, and more.

CRC Press

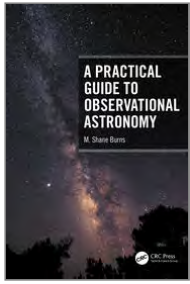
August 2014 : 504pp

Pb: 978-1-466-58461-7 : **£105**

eBook: 978-0-429-10264-6

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A Practical Guide to Observational Astronomy



M. Shane Burns

A Practical Guide to Observational Astronomy provides a practical and accessible introduction to the ideas and concepts that are essential to making and analyzing astronomical observations. A key emphasis of the book is on how modern astronomy would be impossible without the extensive use of computers, both for the control of astronomical instruments and the subsequent data analysis.

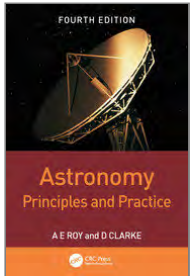
CRC Press
September 2023 : 174pp
Pb: 978-1-032-06802-2 : **£49.99**
Hb: 978-0-367-76863-8 : **£94.99**
eBook: 978-1-003-20391-9

* For full contents and more information, visit: www.routledge.com/9781032068022

4TH EDITION

Astronomy

Principles and Practice, Fourth Edition (PBK)



A.E. Roy University of Glasgow, Scotland, **D. Clarke**
University of Glasgow, Scotland

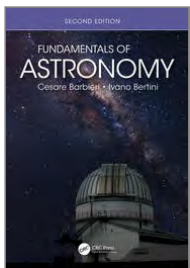
Known to many astronomers as simply "Roy & Clarke," the authors revised and extended this edition to account for developments and changes in teaching over the last decade. It introduces the concepts and historical development of astronomy, presents a course on positional measurement and celestial mechanics, and describes the techniques and instrumentation of modern astronomical observation and measurements for undergraduate students studying astronomy, in addition to anyone who has a strong desire to understand the philosophy and applications of the science of astronomy.

CRC Press
June 2003 : 500pp
Pb: 978-0-750-30917-2 : **£65.99**
Hb: 978-1-138-40622-3 : **£200**

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2ND EDITION

Fundamentals of Astronomy



Cesare Barbieri, **Ivano Bertini**

Providing a broad overview of foundational concepts, this second edition of Fundamentals of Astronomy covers topics ranging from spherical astronomy to reference systems, and celestial mechanics to astronomical photometry and spectroscopy. It expounds arguments of classical astronomy that provided the foundation for modern astrometry, whilst presenting the latest results of the very-long-baseline interferometry (VLBI) radio technique, optical interferometers and satellites such as Hipparcos and GAIA, and recent resolutions of the IAU and IERS regarding precession, forced and free nutation, and Earth figure and rotation.

CRC Press
November 2020 : 346pp
Hb: 978-0-367-25349-3 : **£180**
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Fundamentals of Radio Astronomy

Observational Methods and Astrophysics - Two Volume Set



Jonathan Marr, **Ronald L. Snell**, **Stanley E. Kurtz**

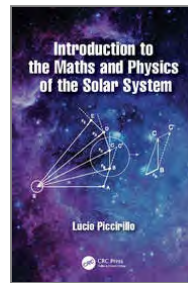
Series: *Series in Astronomy and Astrophysics*

This two-volume set of introductory textbooks are the first exclusively devoted to radio astronomy, and the telescopes, observation methods, and astrophysical processes that furnish this exciting field. Requiring no prior knowledge of astronomy, the two volumes are ideal textbooks for undergraduate and graduate students on radio astronomy courses, particularly those that emphasize radio wavelength instrumentation and observational techniques or the astrophysics of radio sources. The set enables instructors to pick and choose topics from the two volumes that best fit their courses.

CRC Press
March 2021 : 700pp
Pb: 978-0-367-77795-1 : **£101.98**
Hb: 978-1-498-72581-1 : **£230**

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Introduction to the Maths and Physics of the Solar System



Lucio Piccirillo University of Manchester, UK

This book provides readers with an understanding of the basic physics and mathematics that governs our solar system. It explores the mechanics of our Sun and planets; their orbits, tides, craters, eclipses and many other fascinating phenomena including asteroids and comets. This book is a valuable resource for undergraduate students studying astronomy and should be used in conjunction with other introductory astronomy textbooks in the field to provide additional learning opportunities.

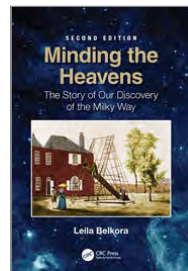
CRC Press
March 2020 : 237pp
Pb: 978-0-367-00254-1 : **£61.99**
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Minding the Heavens

The Story of our Discovery of the Milky Way



Leila Belkora

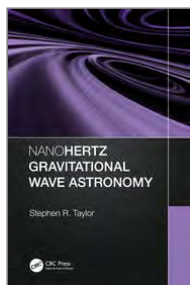
Series: *Discovering Physics*

This fully updated second edition of Minding the Heavens: The Story of Our Discovery of the Milky Way explores how we learned that we live in a galaxy, in a universe of composed of galaxies and unseen, mysterious dark matter. The story unfolds through short biographies of seven astronomers: Thomas Wright, William Herschel, and Wilhelm Struve of the 18th and 19th centuries; the transitional figure of William Huggins; and Jacobus Kapteyn, Harlow Shapley, and Edwin Hubble of the modern, big-telescope era.

CRC Press
May 2021 : 274pp
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Nanohertz Gravitational Wave Astronomy



Stephen R. Taylor

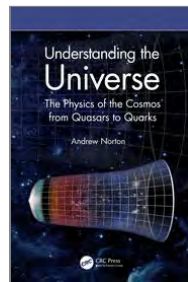
Nanohertz Gravitational Wave Astronomy explores the exciting hunt for low frequency gravitational waves by using the extraordinary timing precision of pulsars.

CRC Press
November 2021 : 172pp
Pb: 978-0-367-76862-1 : **£65.99**
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Understanding the Universe

The Physics of the Cosmos from Quasars to Quarks



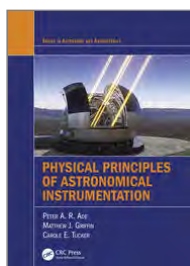
Andrew Norton

Understanding the Universe: The Physics of the Cosmos from Quasars to Quarks explores how all areas of physics, from the very smallest scales to the very largest, come together to form our current understanding of the Universe. It takes readers on a fascinating journey, from the Big Bang and how the Universe has evolved, to how it appears now, and the possibilities for how it will continue to evolve in the future. It also explores the latest exciting developments in the area and how they impact our understanding of the Universe, such as quantum chromodynamics, black holes, dark energy, and gravitational waves.

CRC Press
May 2023 : 252pp
Pb: 978-0-367-75932-2 : **£49.99**
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eBook: 978-1-003-16466-1

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Physical Principles of Astronomical Instrumentation



Peter A. R. Ade , Matthew J. Griffin , Carole E. Tucker

Cardiff University, School of Physics and Astronomy,
United Kingdom

Series: Series in Astronomy and Astrophysics

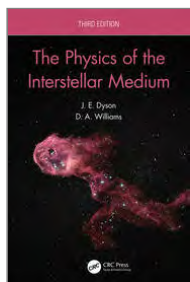
Offering practical advice on a range of wavelengths and tools, this highly accessible, self-contained book presents a broad overview of astronomical instrumentation, techniques, and tools. It provides a toolbox for observational capabilities across the electromagnetic spectrum and a guide to choosing which tools are best suited to different observations. Drawing on the notes and lessons of the authors' established graduate course, the text reviews basic concepts in astrophysics, spectroscopy, and signal analysis and includes illustrative problems and case studies.

CRC Press
January 2024 : 319pp
Pb: 978-1-032-04003-5 : **£49.99**
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eBook: 978-1-315-37465-9

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3RD EDITION

The Physics of the Interstellar Medium



J.E. Dyson Dept of Physics and Astronomy, University of Leeds, UK, **D.A. Williams** Dept of Physics and Astronomy, University of Leeds, UK

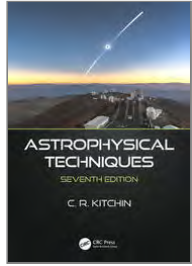
This third edition of The Physics of the Interstellar Medium continues to introduce advanced undergraduates to the fundamental processes and the wide range of disciplines needed to understand observations of the interstellar medium and its role in the Milky Way galaxy. The book is suitable for undergraduate students studying physics, astronomy, and astrophysics. The book also provides concise and straightforward discussions of interstellar physics and chemistry that are useful for more experienced readers.

CRC Press
July 2020 : 206pp
Pb: 978-0-367-90423-4 : **£67.99**
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eBook: 978-1-003-02503-0

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Astrophysical Techniques



C.R. Kitchin

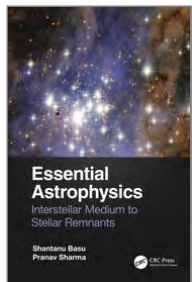
Long used in undergraduate and introductory graduate courses, *Astrophysical Techniques*, Seventh Edition provides an accessible yet comprehensive account of the innovative instruments, detectors, and techniques employed in astronomy and astrophysics. Emphasizing the underlying unity of all astronomical observations, this popular textbook provides a coherent state-of-the-art account of the instruments and techniques used in current astronomy and astrophysics.

CRC Press
July 2020 : 466pp
Pb: 978-1-138-59120-2 : **£94.99**
Hb: 978-1-138-59016-8 : **£235**
eBook: 978-0-429-49113-9

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Essential Astrophysics

Interstellar Medium to Stellar Remnants



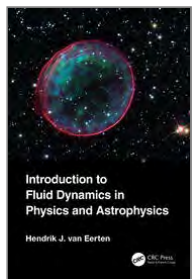
Shantanu Basu , Pranav Sharma

This book takes a reader on a tour of astronomical phenomena: from the vastness of the interstellar medium, to the formation and evolution of stars and planetary systems, through to white dwarfs, neutron stars, and black holes, the final objects of the stellar graveyard.

CRC Press
September 2021 : 172pp
Pb: 978-1-032-10563-5 : **£50.99**
Hb: 978-0-367-76847-8 : **£94.99**
eBook: 978-1-003-21594-3

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Introduction to Fluid Dynamics in Physics and Astrophysics



Hendrik Jan van Eerten

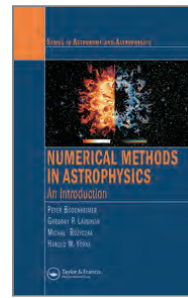
This textbook provides an accessible and self-contained introduction to the physics behind fluid dynamics; exploring the laws of nature describing three out of four fundamental states of matter (liquids, gases, and plasmas). Based on years of teaching of fluid dynamics theory and computation at advanced undergraduate level, it provides readers with the tools to understand and model fluid dynamical systems across a wide range of applications, from dense liquids to dilute space plasmas.

CRC Press
January 2024 : 326pp
Pb: 978-0-367-55235-0 : **£68.99**
Hb: 978-0-367-55777-5 : **£175**
eBook: 978-1-003-09508-8

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Numerical Methods in Astrophysics

An Introduction



Peter Bodenheimer University of California, Santa Cruz, USA, **Peter Bodenheimer** University of California, USA, **Gregory P. Laughlin** University of California, USA, **Gregory P. Laughlin** University of California, Santa Cruz, USA, **Michal Rozyczka** , **Tomasz Plewa** Florida State University, USA, **Harold. W Yorke** Jet Propulsion Laboratory, PASADENA, USA, **Michal Rozyczka** , **Harold W. Yorke** Jet Propulsion Laboratory, CA, USA

Series: Series in Astronomy and Astrophysics

This guide develops many numerical techniques for solving major astrophysics problems. After an introduction to the basic equations and derivations, the book focuses on practical applications of the numerical methods. It explores hydrodynamic problems in one dimension, N-body particle dynamics, smoothed particle hydrodynamics, and stellar structure and evolution. The authors also examine advanced techniques in grid-based hydrodynamics, evaluate the methods for calculating the gravitational forces in an astrophysical system, and discuss specific problems in grid-based methods for radiation transfer. The book incorporates user manuals and a CD-ROM of the numerical codes.

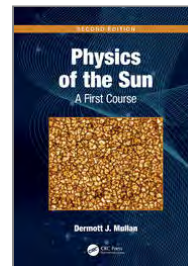
CRC Press
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eBook: 978-0-429-14816-3

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2ND EDITION

Physics of the Sun

A First Course



Dermott J. Mullan University of Delaware, Newark, USA

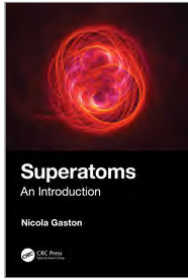
With an emphasis on numerical modelling, *Physics of the Sun: A First Course* presents a quantitative examination of the physical structure of the Sun and the conditions of its extended atmosphere. It gives step-by-step instructions for calculating the numerical values of various physical quantities in different regions of the Sun.

CRC Press
March 2025 : 434pp
Pb: 978-0-367-72032-2 : **£48.99**
Hb: 978-0-367-71039-2 : **£94.99**
eBook: 978-1-003-15311-5

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Superatoms

An Introduction



Nicola Gaston

This book is designed to be an introduction to the field, covering the history of the concept and related theoretical models from cluster physics. It provides an overview of modern theoretical techniques and presents a survey of recent literature, with particular emphasis on the utilisation of these nanoscale building blocks.

CRC Press

April 2023 : 114pp

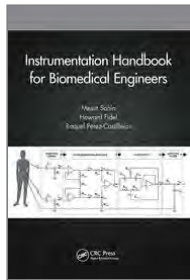
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Instrumentation Handbook for Biomedical Engineers



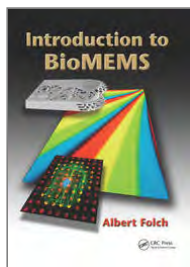
Mesut Sahin New Jersey Institute of Technology, Newark, New Jersey, USA, **Howard Fidel**, **Raquel Perez-Castillejos**

The book fills a void as a textbook with hands-on laboratory exercises designed for biomedical engineering undergraduates in their senior year or the first year of graduate studies specializing in electrical aspects of bioinstrumentation. Each laboratory exercise concentrates on measuring a biophysical or biomedical entity, such as force, blood pressure, temperature, heart rate, respiratory rate, etc., and guides students through all the way from sensor level to data acquisition and analysis on the computer. The book distinguishes itself from others by providing electrical circuits and other measurement setups that have been tested by the authors.

CRC Press
April 2022 : 216pp
Pb: 978-0-367-56668-5 : **£54.99**
Hb: 978-1-466-50466-0 : **£140**
eBook: 978-0-429-19398-9

* For full contents and more information, visit: www.routledge.com/9780367566685

Introduction to BioMEMS



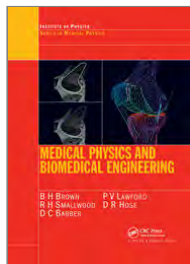
Albert Folch

This classroom-tested book—in color throughout—covers the whole breadth of this dynamic field, including classical microfabrication, microfluidics, tissue engineering, cell-based and noncell-based devices, and implantable systems. It gives readers a real sense of how the field has grown by providing historical perspectives and covering the state of the art. The text contains problem sets, design challenges, key references, and over 400 color figures, most of which are from the original researchers. Downloadable PowerPoint slides are available for instructors.

CRC Press
December 2019 : 528pp
Pb: 978-0-367-86496-5 : **£58.99**
Hb: 978-1-439-81839-8 : **£105**
eBook: 978-0-429-19404-7

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Medical Physics and Biomedical Engineering



B.H Brown, **R.H Smallwood** University of Sheffield, England, UK, **D.C. Barber** Royal Hallamshire Hospital, Sheffield, UK, **P.V Lawford**, **D.R Hose** University of Sheffield, Sheffield, UK

Series: Series in Medical Physics and Biomedical Engineering

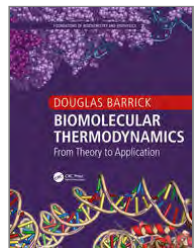
Appropriate for senior undergraduates and graduates, this text presents the underlying physics, electronics, anatomy, and physiology as well as addresses practical applications. The structured approach of the text builds and broadens the material of opening chapters in the later chapters. The book covers biomechanics, image formation techniques, biomedical devices, physiological signals and responses, and respiratory and cardiovascular function and measurement. It includes chapter problems with short questions to test understanding of the main principles and longer questions to test more in-depth knowledge, along with detailed bibliographies that provide references to introductory texts and research materials.

CRC Press
January 1998 : 762pp
Pb: 978-0-750-30368-2 : **£105**
eBook: 978-1-315-27560-4

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Biomolecular Thermodynamics

From Theory to Application



Douglas Barrick Johns Hopkins University, Baltimore, Maryland, USA

Series: Foundations of Biochemistry and Biophysics

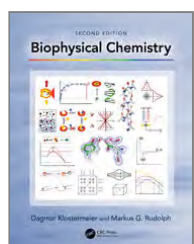
This book introduces the concepts and practical tools necessary to understand the behavior of biological macromolecules at a quantitative level. It begins by describing biochemical phenomena using principles of classical and statistical thermodynamics. Unlike other books, this text goes beyond theory to explain in detail how the equations are applied to the analysis of experimental measurements. This emphasis on real-world applications is continued throughout and is a major feature of the book.

CRC Press
September 2017 : 552pp
Pb: 978-1-439-80019-5 : **£125**
Hb: 978-1-138-06884-1 : **£190**
eBook: 978-1-315-38019-3

* For full contents and more information, visit: www.routledge.com/9781439800195

2ND EDITION

Biophysical Chemistry



Dagmar Klostermeier University of Muenster, Biophysical Chemistry, **Markus G. Rudolph**

This second edition has been fully updated throughout with novel techniques, with a new chapter on advances in cryo-electron microscopy and exciting new content throughout on big data techniques, structural bioinformatics, systems biology and interaction networks, and artificial intelligence and machine learning. The book is organized in four parts, covering thermodynamics, kinetics, molecular structure and stability, and biophysical methods. Cross-references within and between these parts emphasize common themes and highlight recurrent principles.

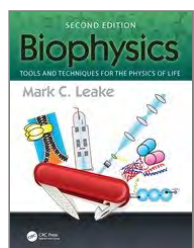
CRC Press
April 2025 : 944pp
Hb: 978-1-032-06083-5 : **£86.99**
eBook: 978-1-003-20398-8

* For full contents and more information, visit: www.routledge.com/9781032060835

2ND EDITION

Biophysics

Tools and Techniques for the Physics of Life



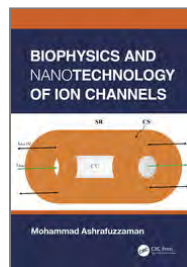
Mark C. Leake Biological Physical Sciences Institute (BPSI), University of York, UK

Biophysics: Tools and Techniques for the Physics of Life covers the experimental, theoretical and computational tools and techniques of biophysics. It addresses the purpose, science, and application of all physical science instrumentation, theoretical analysis and biophysical computational methods used in current research labs. The book first presents the historical background, concepts, and motivation for using a physical science toolbox to understand biology. It then familiarizes undergraduate students from the physical sciences with essential biological knowledge.

CRC Press
December 2023 : 456pp
Pb: 978-1-032-37038-5 : **£60.99**
Hb: 978-1-032-37321-8 : **£165**
eBook: 978-1-003-33643-3

* For full contents and more information, visit: www.routledge.com/9781032370385

Biophysics and Nanotechnology of Ion Channels



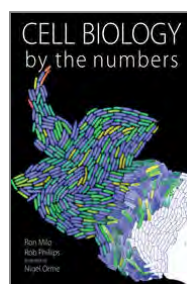
Mohammad Ashrafuzzaman

This book provides a comprehensive review of the biophysics and nanotechnology of ion channels. It details the biological and physiological entities of ion channels in cells and addresses various physical perspectives of ion channel structures and functions.

CRC Press
September 2023 : 318pp
Pb: 978-1-032-07374-3 : **£49.99**
Hb: 978-0-367-44545-4 : **£120**
eBook: 978-1-003-01065-4

* For full contents and more information, visit: www.routledge.com/9781032073743

Cell Biology by the Numbers



Ron Milo, **Rob Phillips**

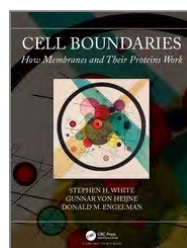
A full color book written as a pocket guide and handy reference for advanced students and practitioners in molecular and cell biology, chemistry, and biophysics. It is based on the BioNumbers website, a peer-reviewed open-source database of numbers, created and curated by author Ron Milo. Well-illustrated and approximately 350 pages long, the book explores some of the key numbers for cell biology, focusing on quantities that help us to think about the sizes, concentrations, rates, energies, information content, and other numbers that describe the living world.

Garland Science
December 2015 : 400pp
Pb: 978-0-815-34537-4 : **£48.99**
eBook: 978-0-429-25877-0

* For full contents and more information, visit: www.routledge.com/9780815345374

Cell Boundaries

How Membranes and Their Proteins Work



Stephen White, **Gunnar von Heijne**, **Donald Engelman** Professor of Molecular Biophysics and Biochemistry, Yale University, USA

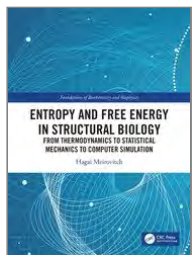
The central themes of Cell Boundaries concern the structural and organizational principles underlying cell membranes, and how these principles enable function. By building a biological and biophysical foundation for understanding the organization of lipids in bilayers and the folding, assembly, stability, and function of membrane proteins, the book aims to broaden the knowledge of bioscience students to include the basic physics and physical chemistry that inform us about membranes. Cell Boundaries was written with advanced undergraduates and beginning graduate students in the biological and physical sciences in mind.

Garland Science
June 2024 : 564pp
Pb: 978-0-367-35716-0 : **£59.99**
Hb: 978-0-815-34216-8 : **£94.99**
eBook: 978-0-429-34132-8

* For full contents and more information, visit: www.routledge.com/9780367357160

Entropy and Free Energy in Structural Biology

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Hagai Meirovitch

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CRC Press

April 2022 : 396pp

Pb: 978-0-367-42745-0 : **£50.99**

Hb: 978-0-367-40692-9 : **£125**

eBook: 978-0-367-85478-2

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2ND EDITION

Physical Biology of the Cell



Rob Phillips, Jané Kondev Brandeis University, USA,
Julie Theriot Stanford University, USA, **Hernan Garcia**

Physical Biology of the Cell is a textbook for a first course in physical biology or biophysics for undergraduate or graduate students. It maps the huge and complex landscape of cell and molecular biology from the distinct perspective of physical biology. As a key organizing principle, the proximity of topics is based on the physical concepts that unite a given set of biological phenomena. The Second Edition features full-color illustrations throughout, two new chapters, a significantly expanded set of end-of-chapter problems, and is available in a variety of e-book formats.

Garland Science

October 2012 : 1088pp

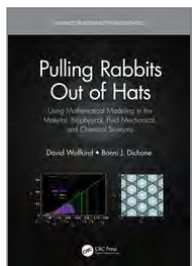
Pb: 978-0-815-34450-6 : **£99.99**

eBook: 978-0-429-16883-3

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Pulling Rabbits Out of Hats

Using Mathematical Modeling in the Material, Biophysical, Fluid Mechanical, and Chemical Sciences



David Wollkind, Bonni J. Dichone Gonzaga University

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CRC Press

October 2024 : 554pp

Pb: 978-1-032-05007-2 : **£48.99**

Hb: 978-1-032-04787-4 : **£195**

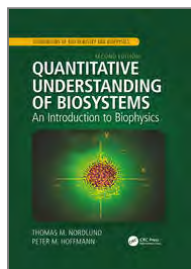
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CRC Press

March 2021 : 632pp

Pb: 978-0-367-77991-7 : **£50.99**

Hb: 978-1-138-63341-4 : **£155**

eBook: 978-1-315-20760-5

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Textbook of Ion Channels

Three Volume Set



Edited by Jie Zheng University of California at Davis, USA,
Matthew C. Trudeau University of Maryland, Baltimore, USA

This three-volume textbook provides a wide-ranging reference source on ion channels for students, instructors, and researchers. The modern methods used in the study of ion channels are powerful and diverse, and all three volumes give the reader an introduction to the fundamental concepts of the mechanism of ion channels, a guide to technical research aspects, a modern guide to the properties of major ion channel families, and include key examples of regulatory, physiological, and disease roles for ion channels.

CRC Press

October 2025 : 1064pp

Pb: 978-1-032-42430-9 : **£158.97**

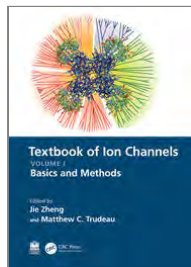
Hb: 978-1-032-42428-6 : **£315**

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Textbook of Ion Channels Volume I

Fundamental Mechanisms and Methodologies



Edited by Jie Zheng University of California at Davis, USA,
Matthew C. Trudeau University of Maryland, Baltimore, USA

This three-volume textbook provides a wide-ranging reference source on ion channels for students, instructors, and researchers. Volume I covers fundamental topics and basic principles, and offers a practical guide of cardinal methods for researching ion channels. The modern methods used in the study of ion channels are powerful and diverse, and all three volumes give the reader an introduction to the fundamental concepts of the mechanism of ion channels, a guide to technical research aspects, a modern guide to the properties of major ion channel families, and include key examples of regulatory, physiological, and disease roles for ion channels.

CRC Press

September 2025 : 330pp

Pb: 978-0-367-56049-2 : **£52.99**

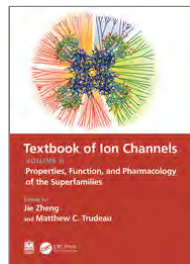
Hb: 978-0-367-53815-6 : **£105**

eBook: 978-1-003-09621-4

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Textbook of Ion Channels Volume II

Properties, Function, and Pharmacology of the Superfamilies



Edited by **Jie Zheng** University of California at Davis, USA,
Matthew C. Trudeau University of Maryland, Baltimore, USA

This three-volume textbook provides a wide-ranging reference source on ion channels for students, instructors, and researchers. Volume II covers the physiological role, structural components, gating mechanisms, biophysics, permeation, selectivity, regulation, and pharmacology in disease mechanisms. The modern methods used in the study of ion channels are powerful and diverse, and all three volumes give the reader an introduction to the fundamental concepts of the mechanism of ion channels, a guide to technical research aspects, a modern guide to the properties of major ion channel families, and include key examples of regulatory, physiological, and disease roles for ion channels.

CRC Press

September 2025 : 488pp

Pb: 978-0-367-56081-2 : **£52.99**

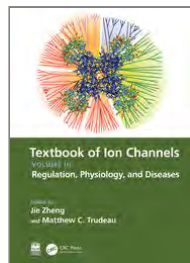
Hb: 978-0-367-53816-3 : **£105**

eBook: 978-1-003-09627-6

* For full contents and more information, visit: www.routledge.com/9780367560812

Textbook of Ion Channels Volume III

Regulation, Physiology, and Diseases



Edited by **Jie Zheng** University of California at Davis, USA,
Matthew C. Trudeau University of Maryland, Baltimore, USA

This three-volume textbook provides a wide-ranging reference source on ion channels for students, instructors, and researchers. Volume III covers key ion channel regulators, the role of ion channels in selected physiological systems, and examples of mutations and dysfunction in selected diseases. The modern methods used in the study of ion channels are powerful and diverse, and all three volumes give the reader an introduction to the fundamental concepts of the mechanism of ion channels, a guide to technical research aspects, a modern guide to the properties of major ion channel families, and include key examples of regulatory, physiological, and disease roles for ion channels.

CRC Press

October 2025 : 246pp

Pb: 978-1-032-40804-0 : **£52.99**

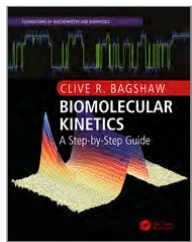
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eBook: 978-1-003-31031-0

* For full contents and more information, visit: www.routledge.com/9781032408040

Biomolecular Kinetics

A Step-by-Step Guide



Clive R. Bagshaw University of California at Santa Cruz & University of Leicester

Series: *Foundations of Biochemistry and Biophysics*

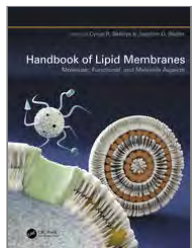
Biomolecular kinetics concerns the measurement and analysis of reaction phenomena as a function of time. This book explains the methods used for measuring how much a reaction gets speeded up, as well as the framework for solving problems such as ligand binding and macromolecular folding. It is a thoroughly modern text, reflecting the groundbreaking impact of our ability to observe reactions at the single-molecule level, as well as the advances in microfluidics, which have given rise to femtoscale studies.

CRC Press
October 2017 : 470pp
Pb: 978-1-498-72723-5 : £155
Hb: 978-1-138-06658-8 : £200
eBook: 978-1-315-12035-5

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Handbook of Lipid Membranes

Molecular, Functional, and Materials Aspects



Edited by **Cyrus R. Safinya** University of California, Santa Barbara, USA, **Joachim O. Rädler** Ludwig Maximilians University, Munich, Bavaria, Germany

This Handbook provides a comprehensive overview of lipid membrane fundamentals and applications. It gives the fundamental physical and biochemical aspects of membrane-related processes in living cells, and then relates them to how scientists are building bioinspired, artificial membrane-based systems such as gene delivery vehicles and synthetic membrane interfaces. It highlights the driving mechanism behind lipid self-assembly, membrane shape evolution, and vesicle trafficking, as well as the role of lipid membrane composition in signalling and the structural aspects of membranes in cellular integrity.

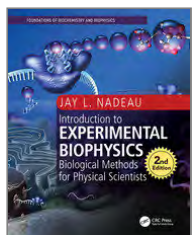
CRC Press
October 2024 : 376pp
Pb: 978-1-032-01441-8 : £48.99
Hb: 978-1-466-55572-3 : £170
eBook: 978-0-429-19407-8

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2ND EDITION

Introduction to Experimental Biophysics

Biological Methods for Physical Scientists



Jay L. Nadeau Portland State University, OR, USA

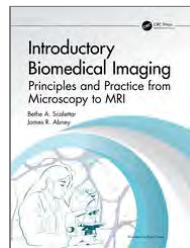
This book provides a starting point for any student or researcher in the physical sciences to gain firm grounding in the techniques employed in molecular biophysics and quantitative biology. As with the first edition, the author will take a practical approach, sharing expert tips and insider's knowledge to simplify potentially confusing techniques as much as possible. The reader will be guided through the basics of experimental set-up, followed by an easy-to-follow example carried out from start to finish, with hints for how to get things right. The emphasis is on building comfort with getting hands 'wet' with basic methods, and understanding how to adapt them to address other questions.

CRC Press
October 2017 : 790pp
Pb: 978-1-498-79959-1 : £99.99
Hb: 978-1-138-08815-3 : £200
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Principles and Practice from Microscopy to MRI



Beth A. Scalettar Lewis & Clark College, **James R. Abney**

Series: *Imaging in Medical Diagnosis and Therapy*

This undergraduate textbook introduces imaging techniques used in medicine and science, presenting the underlying physics concepts of light microscopy, endoscopy, ultrasound, projection radiography, computed tomography, radionuclide imaging, and magnetic resonance imaging. Theoretical principles are reinforced with illustrative homework problems, applications, activities, and experiments. The book is designed to facilitate the teaching of biomedical imaging courses; it is unique in its coverage of both optical microscopy and medical imaging at an intermediate level, and exceptional in its coverage of material at several levels of sophistication.

CRC Press
May 2024 : 338pp
Pb: 978-1-138-62668-3 : £48.99
Hb: 978-1-032-32819-5 : £125
eBook: 978-1-315-22313-1

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2ND EDITION

Physical Biology of the Cell



Rob Phillips, **Jané Kondev** Brandeis University, USA, **Julie Theriot** Stanford University, USA, **Hernan Garcia**

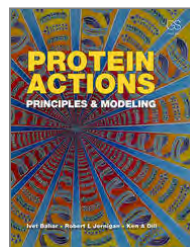
Physical Biology of the Cell is a textbook for a first course in physical biology or biophysics for undergraduate or graduate students. It maps the huge and complex landscape of cell and molecular biology from the distinct perspective of physical biology. As a key organizing principle, the proximity of topics is based on the physical concepts that unite a given set of biological phenomena. The Second Edition features full-color illustrations throughout, two new chapters, a significantly expanded set of end-of-chapter problems, and is available in a variety of e-book formats.

Garland Science
October 2012 : 1088pp
Pb: 978-0-815-34450-6 : £99.99
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Protein Actions

Principles and Modeling



Ivet Bahar, **Robert L. Jernigan**, **Ken A. Dill**

Protein Actions: Principles and Modeling describes the basic principles of protein molecules—their structures; their folding, binding and aggregation; their dynamics and mechanisms; and their evolution—as well as the methods of modeling them, including bioinformatics, physics-based computer simulations, and the tools of drug discovery. It is intended for a one-semester course for biological scientists learning quantitative foundations and for physical scientists learning the biology and chemistry. This text is ideal for graduates, advanced undergraduates, and any professional who seeks an introduction to the biological, chemical, and physical properties of proteins.

Garland Science
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Pb: 978-0-815-34177-2 : £120
eBook: 978-1-315-21221-0

* For full contents and more information, visit: www.routledge.com/9780815341772

Quantitative Bioimaging

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Raimund J. Ober Texas A & M University, Texas, USA, **E. Sally Ward**, **Jerry Chao** Texas A & M University, Texas, USA

Cellular microscopy for live cell imaging has become an indispensable tool for solving biological problems. This textbook provides a truly unique introduction that integrates the concepts and methods of optics, molecular and cellular biology, image analysis, and bioengineering. The coverage spans from essential aspects of molecular and cellular biology to a detailed treatment of practical aspects, addressing such topics as colocalization, intracellular trafficking, 3D reconstruction, and membrane receptor dynamics. The authors take a two-tiered approach in later chapters, providing a survey level overview followed by in-depth discussion that gives more detailed explanations.

CRC Press

January 2022 : 503pp

Pb: 978-0-367-61545-1 : £52.99

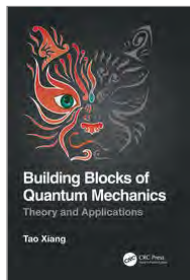
Hb: 978-1-138-59898-0 : £125

eBook: 978-0-429-46989-3

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Building Blocks of Quantum Mechanics

Theory and Applications



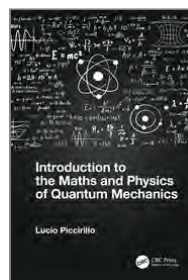
Tao Xiang

This textbook provides a concise yet comprehensive introduction to the principles, concepts, and methods of quantum mechanics. It covers the basic building blocks of quantum mechanics theory and applications, illuminated throughout by physical insights and examples of quantum mechanics, such as the one-dimensional eigen-problem, the harmonic oscillator, the Aharonov-Bohm effect, Landau levels, the hydrogen atom, the Landau-Zener transition and the Berry phase.

CRC Press
May 2022 : 264pp
Pb: 978-0-367-77150-8 : **£65.99**
Hb: 978-1-032-00610-9 : **£170**
eBook: 978-1-003-17488-2

* For full contents and more information, visit: www.routledge.com/9780367771508

Introduction to the Maths and Physics of Quantum Mechanics



Lucio Piccirillo University of Manchester, UK

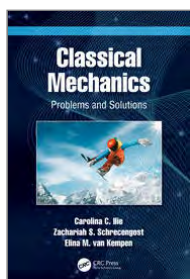
This book will appeal to first- and second-year university students in physics, mathematics, engineering and other sciences studying quantum mechanics who will find material and clarifications not easily found in other textbooks. It will also appeal to self-taught readers with a genuine interest in modern physics who are willing to examine the mathematics and physics in a simple but rigorous way.

CRC Press
August 2025 : 246pp
Pb: 978-0-367-69901-7 : **£52.99**
Hb: 978-0-367-70302-8 : **£86.99**
eBook: 978-1-003-14556-1

* For full contents and more information, visit: www.routledge.com/9780367699017

Classical Mechanics

Problems and Solutions



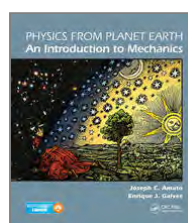
Carolina C. Ilie, Zachariah S. Schrecengost, Elina M. van Kempen

This book of problems and solutions in classical mechanics is dedicated to junior or senior undergraduate students in physics, engineering, applied mathematics, astronomy, or chemistry who may want to improve their problems solving skills, or to freshman graduate students who may be seeking a refresh of the material. The book is structured in ten chapters, starting with Newton's laws, motion with air resistance, conservation laws, oscillations, and the Lagrangian and Hamiltonian Formalisms.

CRC Press
March 2025 : 280pp
Pb: 978-1-032-43099-7 : **£48.99**
Hb: 978-0-367-76844-7 : **£83.99**
eBook: 978-1-003-36570-9

* For full contents and more information, visit: www.routledge.com/9781032430997

Physics from Planet Earth - An Introduction to Mechanics



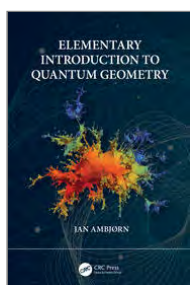
Joseph C. Amato Colgate University, Hamilton, New York, USA, **Enrique J. Galvez** Colgate University, Hamilton, New York, USA

This classroom-tested text provides a one-semester, calculus-based introduction to classical mechanics for first-year undergraduate students. The authors introduce the three conservation laws as fundamental laws of nature from which secondary concepts are derived and organize topics around the conservation laws. They also illustrate many topics through real, contemporary applications in astronomy, planetary science, and space travel. The book includes short exercises throughout the text as well as novel problems at the end of each chapter.

CRC Press
June 2015 : 612pp
Hb: 978-1-439-86783-9 : **£94.99**
eBook: 978-0-429-19447-4

* For full contents and more information, visit: www.routledge.com/9781439867839

Elementary Introduction to Quantum Geometry



Jan Ambjorn

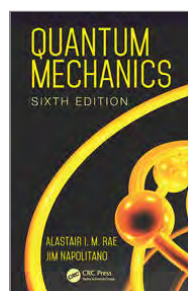
This graduate textbook provides an introduction to quantum gravity, when spacetime is two-dimensional. The quantization of gravity is the main missing piece of theoretical physics, but in two dimensions it can be done explicitly with elementary mathematical tools, but it still has most of the conceptual riddles present in higher dimensional (not yet known) quantum gravity.

CRC Press
March 2025 : 290pp
Pb: 978-1-032-34100-2 : **£48.99**
Hb: 978-1-032-33555-1 : **£83.99**
eBook: 978-1-003-32056-2

* For full contents and more information, visit: www.routledge.com/9781032341002

6TH EDITION

Quantum Mechanics



Alastair I. M. Rae University of Birmingham, UK, **Jim Napolitano** Temple University, Pennsylvania, USA

This sixth edition builds on its highly praised predecessors to make the text even more accessible to a wider audience. It contains three new chapters that review prerequisite physics and mathematics, laying out the notation, formalism, and physical basis necessary for the rest of the book. Along with more problems, this edition also presents short descriptions of numerous applications relevant to the physics discussed, offering a brief look at what quantum mechanics has made possible industrially and scientifically.

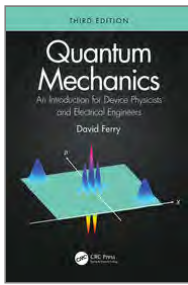
CRC Press
December 2015 : 440pp
Pb: 978-1-482-29918-2 : **£61.99**
Hb: 978-1-138-45833-8 : **£200**
eBook: 978-0-429-15734-9

* For full contents and more information, visit: www.routledge.com/9781482299182

3RD EDITION

Quantum Mechanics

An Introduction for Device Physicists and Electrical Engineers

**David K. Ferry** Arizona State University, Tempe, USA

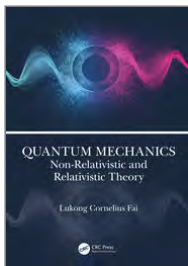
Quantum Mechanics: An Introduction for Device Physicists and Electrical Engineers, Third Edition provides a complete course in quantum mechanics for students of semiconductor device physics and electrical engineering. It provides the necessary background to quantum theory for those starting work on micro- and nanoelectronic structures and is particularly useful for those beginning work with modern semiconductor devices, lasers and qubits.

CRC Press
December 2020 : 328pp
Pb: 978-0-367-46727-2 : **£87.99**
Hb: 978-0-367-46915-3 : **£235**
eBook: 978-1-003-03194-9

* For full contents and more information, visit: www.routledge.com/9780367467272

Quantum Mechanics

Non-Relativistic and Relativistic Theory

**Lukong Cornelius Fai** University of Dschang, Cameroon

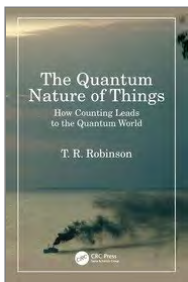
This book provides an accessible treatment of non-relativistic and relativistic quantum mechanics. It is an ideal textbook for undergraduate and graduate physics students, as well as researchers in theoretical physics, quantum mechanics, condensed matter, mathematical physics, quantum chemistry and electronic students.

CRC Press
August 2024 : 552pp
Pb: 978-1-032-22559-3 : **£48.99**
Hb: 978-1-032-22146-5 : **£140**
eBook: 978-1-003-27307-3

* For full contents and more information, visit: www.routledge.com/9781032225593

The Quantum Nature of Things

How Counting Leads to the Quantum World

**T R Robinson**

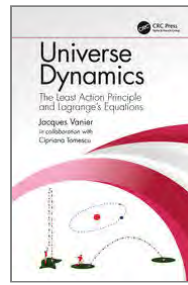
This book offers readers an entirely original and unconventional view of quantum mechanics. It is a view that accepts quantum mechanics as the natural way to think about the way nature works, rather than the view commonly expressed, especially in books on quantum physics, that quantum theory is weird and counterintuitive. It is based on the concept of itemization. From this simple premise, quantities like energy and momentum, both linear and angular emerge naturally, as do configuration space, potentials, the electromagnetic field, many-body dynamics, special relativity and relativistic wave mechanics.

CRC Press
April 2023 : 282pp
Pb: 978-1-032-45546-4 : **£51.99**
Hb: 978-1-032-44623-3 : **£135**
eBook: 978-1-003-37750-4

* For full contents and more information, visit: www.routledge.com/9781032455464

Universe Dynamics

The Least Action Principle and Lagrange's Equations

**Jacques Vanier** Université de Montréal, Québec, Canada,
Cipriana Tomescu Université de Montréal, Québec, Canada

Brought together in one focused and exclusive treatment, this book provides an elementary introduction to the important role and use of the least action principle and the resulting Lagrange's equations in the analysis of the laws that govern the universe. It is an ideal complimentary resource to accompany undergraduate courses and textbooks on classical mechanics.

CRC Press
January 2019 : 184pp
Pb: 978-1-138-33579-0 : **£65.99**
Hb: 978-1-138-33589-9 : **£235**
eBook: 978-0-429-44347-3

* For full contents and more information, visit: www.routledge.com/9781138335790

Visualizing Quantum Mechanics with Python

**Steve Spicklemire**

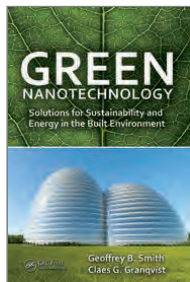
The goal of this book is to reduce the complexity and clarify the abstractions with concrete visual examples driven by simple python programs. It is assumed that the reader is concurrently taking a course in quantum mechanics, or self-studying quantum mechanics, but is looking for supplementary material to help with understanding and visualizing how quantum mechanics works.

CRC Press
June 2024 : 60pp
Pb: 978-1-032-56924-6 : **£23.99**
Hb: 978-0-367-76879-9 : **£55.99**
eBook: 978-1-003-43770-3

* For full contents and more information, visit: www.routledge.com/9781032569246

Green Nanotechnology

Solutions for Sustainability and Energy in the Built Environment



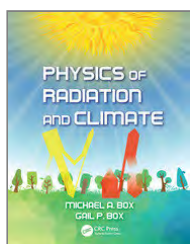
Geoffrey B. Smith University of Technology, Broadway, Australia, **Claes-Goran S. Granqvist** Uppsala University, Sweden

A focused exploration of the role nanotechnology plays in meeting the challenges inherent in minimizing environmental impacts while maximizing energy resources, this book provides an overview of our energy supply, increasing energy production while reducing cost, and offering novel energy sources. It explores the ways in which nanotechnologies can improve structural engineering of energy sources, create novel methods of cooling, and inspire new approaches to water supply and treatment. In addressing these critical issues, the book provides an authoritative resource that provides the foundation for new research and product development.

CRC Press
September 2010 : 484pp
Hb: 978-1-420-08532-7 : £190
eBook: 978-0-429-19304-0

* For full contents and more information, visit: www.routledge.com/9781420085327

Physics of Radiation and Climate



Michael A. Box, **Gail P. Box**

This book offers an introduction to the physics of climate science. It is divided into three main sections, with the first providing an introduction to the atmosphere and ocean—their composition, thermodynamics, vertical structure, and basic flow patterns. The next chapters focus on the central physics of interactions between radiation, gases, and particles, addressing the core phenomena of absorption, emission, scattering, and radiative transfer. The final section integrates those principles and how they are applied in the study of weather and climate change.

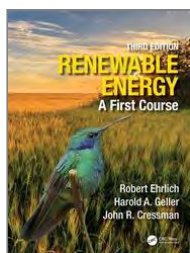
CRC Press
October 2015 : 514pp
Pb: 978-1-466-57205-8 : £105
Hb: 978-1-138-42426-5 : £200
eBook: 978-0-429-19422-1

* For full contents and more information, visit: www.routledge.com/9781466572058

3RD EDITION

Renewable Energy

A First Course



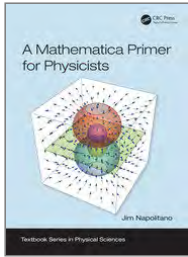
Robert Ehrlich George Mason University, Virginia, USA, **Harold A. Geller** George Mason University, Fairfax, Virginia, USA, **John R. Cressman** George Mason University

This revised edition is fully updated and continues to provide the best in-depth introduction to renewable energy science. It focuses mainly on renewable energy, but also addresses nonrenewable energy (fossil fuels and nuclear technology). The coverage extends from the basic physics to conservation, economic, and public policy issues, with strong emphasis on explaining how things work in practice. The authors avoid technical jargon and advanced math, but address fundamental analytical skills with wide application. Updated statistics, figures, policies, trends, and technological advancements will bring the reader up to speed with the current state of renewable energy.

CRC Press
July 2022 : 562pp
Pb: 978-0-367-76837-9 : £99.99
Hb: 978-1-032-00088-6 : £265
eBook: 978-1-003-17267-3

* For full contents and more information, visit: www.routledge.com/9780367768379

A Mathematica Primer for Physicists



Jim Napolitano Temple University, Pennsylvania, USA

Series: *Textbook Series in Physical Sciences*

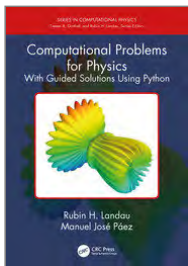
This book offers the most concise and approachable guide for quickly getting into Mathematica and using it for solving common problems. The author addresses a wide range of problems, including numerical calculations, animation, and visualization tools. Each chapter begins with simple commands, and then shows how to apply them. The goal is to give the essentials necessary for readers to get started, without getting bogged down in unnecessary details. The writing is clear and conversational, making it accessible and easy for the reader to follow.

CRC Press
March 2018 : 214pp
Pb: 978-1-138-03509-6 : **£67.99**
Hb: 978-1-138-48656-0 : **£200**
eBook: 978-1-315-26948-1

* For full contents and more information, visit: www.routledge.com/9781138035096

Computational Problems for Physics

With Guided Solutions Using Python



Rubin H. Landau Distinguished Professor Emeritus, Oregon State University, USA, **Manuel José Páez**

Series: *Series in Computational Physics*

Our future scientists and professionals must be conversant in computational techniques. In order to facilitate integration of computer methods into existing physics courses, this textbook offers a large number of worked examples and problems with fully guided solutions in Python as well as other languages (Mathematica, Java, C, Fortran, and Maple) on the Web. It's also intended as a self-study guide for learning how to use computer methods in physics. The authors include an introductory chapter on numerical tools and indication of computational as well as a separate chapter with problems for beginning students.

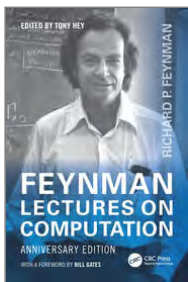
CRC Press
June 2018 : 430pp
Pb: 978-1-138-70541-8 : **£78.99**
Hb: 978-1-138-70591-3 : **£125**
eBook: 978-1-315-20209-9

* For full contents and more information, visit: www.routledge.com/9781138705418

2ND EDITION

Feynman Lectures on Computation

Anniversary Edition



Edited by **Tony Hey** Microsoft Research Connections, Redmond, Washington, USA

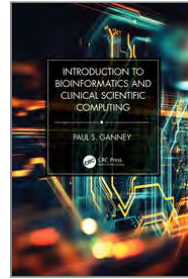
Series: *Frontiers in Physics*

The last lecture course that Nobel Prize winner Richard P. Feynman gave at Caltech from 1983 to 1986 was not on physics but on computer science. The first edition of this book published in 1996 and provided an overview of standard and not-so-standard topics in computer science given in Feynman's inimitable style. The material is still relevant and interesting, and Feynman's unique philosophy of learning and discovery shines through. For this new edition, editor Tony Hey has updated the lectures with invited chapters from preeminent scholars. This exciting and important work provides key reading for students and scholars in the fields of computer science and computational physics.

CRC Press
May 2023 : 426pp
Pb: 978-0-367-85733-2 : **£55.99**
Hb: 978-1-032-41588-8 : **£145**
eBook: 978-1-003-35881-7

* For full contents and more information, visit: www.routledge.com/9780367857332

Introduction to Bioinformatics and Clinical Scientific Computing



Paul S. Ganney

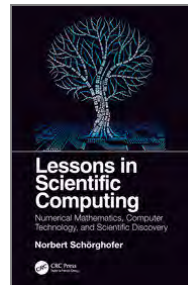
This textbook provides an introduction to computer science theory, informatics best practice, and the standards and legislation that apply to computing in a healthcare environment. It delivers an accessible discussion of databases (construction, interrogation and maintenance); networking (design and low-level application); programming (best practice rather than the specifics of any one language – design, maintenance, safety).

CRC Press
March 2025 : 404pp
Pb: 978-1-032-32693-1 : **£48.99**
Hb: 978-1-032-32413-5 : **£83.99**
eBook: 978-1-003-31624-4

* For full contents and more information, visit: www.routledge.com/9781032326931

Lessons in Scientific Computing

Numerical Mathematics, Computer Technology, and Scientific Discovery



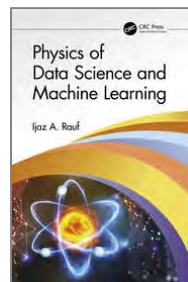
Norbert Schorghofer University of Hawaii, USA

Taking an interdisciplinary approach, this new book provides a modern introduction to scientific computing, exploring numerical methods, computer technology, and their interconnections, which are treated with the goal of facilitating scientific research across all disciplines. Each chapter provides an insightful lesson and viewpoints from several subject areas are often compounded within a single chapter. Written with an eye on usefulness, longevity, and breadth, *Lessons in Scientific Computing* will serve as a "one stop shop" for undergrad students taking a unified course in scientific computing, or seeking a single cohesive text spanning multiple courses.

CRC Press
October 2018 : 204pp
Pb: 978-1-138-07058-5 : **£67.99**
Hb: 978-1-138-07063-9 : **£235**
eBook: 978-1-315-10835-3

* For full contents and more information, visit: www.routledge.com/9781138070585

Physics of Data Science and Machine Learning



Ijaz A. Rauf

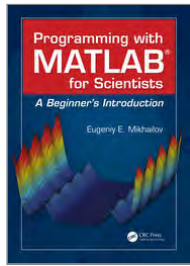
Physics of Data Science and Machine Learning links fundamental concepts of physics to data science, machine learning and artificial intelligence for physicists looking to integrate these techniques into their work.

CRC Press
November 2021 : 210pp
Pb: 978-1-032-07401-6 : **£65.99**
Hb: 978-0-367-76858-4 : **£94.99**
eBook: 978-1-003-20674-3

* For full contents and more information, visit: www.routledge.com/9781032074016

Programming with MATLAB for Scientists

A Beginner's Introduction



Eugeny E. Mikhailov College of William and Mary,
Department of Physics, Williamsburg, Virginia, USA

This book offers an introduction to the basics of MATLAB programming to scientists and engineers. The author leads with engaging examples to build a working knowledge, specifically geared to those with science and engineering backgrounds. The reader is empowered to model and simulate real systems, as well as present and analyze everyday data sets. In order to achieve those goals, the contents bypass excessive “under the hood” details, and instead gets right down to the essential, practical foundations for successful programming and modeling.

CRC Press

January 2018 : 264pp

Pb: 978-1-498-73828-6 : £71.99

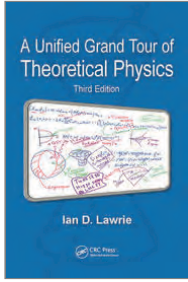
Hb: 978-1-138-57004-7 : £170

eBook: 978-1-351-22818-3

* For full contents and more information, visit: www.routledge.com/9781498738286

3RD EDITION

A Unified Grand Tour of Theoretical Physics



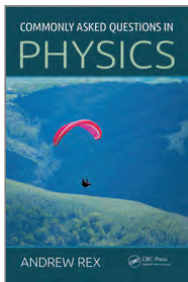
Ian D. Lawrie University of Leeds, UK

The third edition of this best-selling text continues to provide an accessible overview of the fundamental ideas underpinning our understanding of theoretical physics. The basic structure of each theory is explained in explicit mathematical detail with emphasis on conceptual understanding rather than on the technical details of specialized applications. Suitable for undergraduate and graduate courses, this new edition includes updates and advancements in string theory and quantum gravity. A supplementary website provides ancillary material and side issues to create a platform for further research and classroom discussion.

CRC Press
November 2012 : 711pp
Pb: 978-1-439-88446-1 : **£91.99**
Hb: 978-1-138-47335-5 : **£200**
eBook: 978-0-429-11123-5

* For full contents and more information, visit: www.routledge.com/9781439884461

Commonly Asked Questions in Physics



Andrew Rex University of Puget Sound, Tacoma, Washington, USA

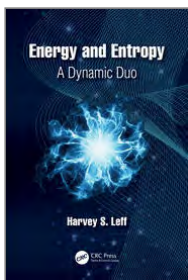
Suitable for a wide audience, this book covers a broad scope of subjects, from classical physics that goes back to the age of Newton to new ideas just formulated in the twenty-first century. The book highlights the core areas of physics that predate the twentieth century, including mechanics, electromagnetism, optics, and thermodynamics. It also focuses on modern physics, covering quantum mechanics, atomic and nuclear physics, fundamental particles, and relativity.

CRC Press
February 2014 : 256pp
Pb: 978-1-466-56017-8 : **£31.99**
Hb: 978-1-138-42956-7 : **£200**
eBook: 978-0-429-19405-4

* For full contents and more information, visit: www.routledge.com/9781466560178

Energy and Entropy

A Dynamic Duo



Harvey S. Leff

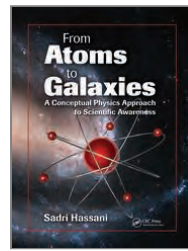
Energy is typically regarded as understandable despite its multiple forms of storage and transfer. Yet entropy is an enigma, in part because of the common view that it represents disorder. That view is flawed and hides entropy's connection with energy. However, macroscopic matter stores internal energy, and that matter's entropy is determined by how the energy is stored. Energy and entropy are intimately linked.

CRC Press
August 2020 : 330pp
Pb: 978-0-367-34906-6 : **£50.99**
Hb: 978-0-367-35141-0 : **£140**
eBook: 978-0-429-33001-8

* For full contents and more information, visit: www.routledge.com/9780367349066

From Atoms to Galaxies

A Conceptual Physics Approach to Scientific Awareness



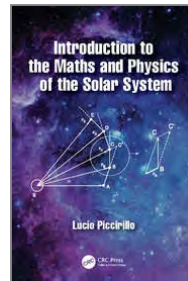
Sadri Hassani

Based on a course given by the author, this text is designed for undergraduates with little science background, demonstrating physical concepts through everyday experiences. Students learn not just how science works, but also how to counter popular misconceptions and pseudoscience. The text presents glossaries, review questions and answers, exercises, numerical problems, and quizzes.

CRC Press
July 2020 : 756pp
Pb: 978-0-367-38411-1 : **£65.99**
Hb: 978-1-439-80849-8 : **£190**
eBook: 978-0-429-06685-6

* For full contents and more information, visit: www.routledge.com/9780367384111

Introduction to the Maths and Physics of the Solar System



Lucio Piccirillo University of Manchester, UK

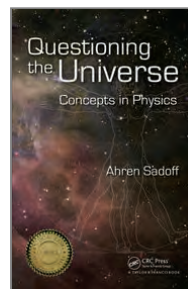
This book provides readers with an understanding of the basic physics and mathematics that governs our solar system. It explores the mechanics of our Sun and planets; their orbits, tides, craters, eclipses and many other fascinating phenomena including asteroids and comets. This book is a valuable resource for undergraduate students studying astronomy and should be used in conjunction with other introductory astronomy textbooks in the field to provide additional learning opportunities.

CRC Press
March 2020 : 237pp
Pb: 978-0-367-00254-1 : **£61.99**
Hb: 978-0-367-02271-6 : **£160**
eBook: 978-0-429-40048-3

* For full contents and more information, visit: www.routledge.com/9780367002541

Questioning the Universe

Concepts in Physics



Ahren Sadoff Cornell University, Ithaca, New York, USA

Series: *Discovering Physics*

Written for the nonscientist, this physics primer tells readers the story of what we have found out about nature so far and how we have done it. It delves into basic laws regarding motion, fundamental forces, electromagnetism, and light; introduces major theories pondered by scientists, including relativity, quantum mechanics, and particle physics; describes the key role played by that elemental building block, the atom; and discusses the evolution of the universe. While it requires only the most minimal math, it does require enough of a sense of curiosity to open one's self to consider what are the factors that keep our universe so orderly, operational, and awesomely beautiful.

Chapman & Hall
December 2008 : 234pp
Pb: 978-1-420-08258-6 : **£71.99**
Hb: 978-1-138-42968-0 : **£200**
eBook: 978-0-429-13812-6

* For full contents and more information, visit: www.routledge.com/9781420082586

3RD EDITION

Superstrings and Other Things

A Guide to Physics

**Carlos I. Calle**

Continuing to take readers on a uniquely accessible journey through physics, *Superstrings and Other Things*, Third Edition, explains the basic concepts of motion, energy, and gravity, right up to the latest theories about the structure of matter, the origin and structure of the universe, and the beginning of time.

CRC Press

May 2020 : 474pp

Pb: 978-1-138-36488-2 : **£67.99**Hb: 978-1-138-36492-9 : **£235**

eBook: 978-0-429-43102-9

* For full contents and more information, visit: www.routledge.com/9781138364882

Essentials of Soft Matter Science



Francoise Brochard-Wyart Institut Curie, Paris, France, **Pierre Nassoy** Institut d'Optique d'Aquitaine, Bordeaux, France, **Pierre-Henri Puech** Laboratoire Adhésion et Inflammation, Inserm, CNRS, France

Authored by world-leading physicists, this introductory textbook explores the basic principles of polymers, colloids, liquid crystals, wetting, and foams. It is a practical 'toolbox' for readers to acquire basic knowledge in the field and facilitate further reading and advanced courses.

Undergraduate students in physics, biology, and the medical sciences will learn the basics of soft matter physics, in addition to scaling approaches in the spirit of the Nobel prize laureate in physics in 1991, Pierre-Gilles de Gennes, the inventor of soft matter physics and close collaborator to author Françoise Brochard-Wyart.

CRC Press

September 2019 : 290pp

Pb: 978-1-498-77392-8 : **£87.99**

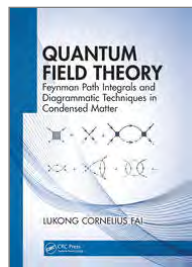
Hb: 978-1-138-74276-5 : **£220**

eBook: 978-0-429-15435-5

* For full contents and more information, visit: www.routledge.com/9781498773928

Quantum Field Theory

Feynman Path Integrals and Diagrammatic Techniques in Condensed Matter



Lukong Cornelius Fai

This book explores quantum field theory using the Feynman functional and diagrammatic techniques as foundations to apply Quantum Field Theory to a broad range of topics in physics. This book will be of interest not only to condensed matter physicists but physicists in a range of disciplines as the techniques explored apply to high-energy as well as soft matter physics.

CRC Press

March 2021 : 535pp

Pb: 978-0-367-77959-7 : **£50.99**

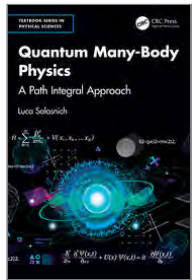
Hb: 978-0-367-18574-9 : **£170**

eBook: 978-0-429-19694-2

* For full contents and more information, visit: www.routledge.com/9780367779597

Quantum Many-Body Physics

A Path Integral Approach



Luca Salasnich

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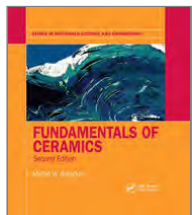
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Linda S. Hirst University of California, Merced, USA

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CRC Press

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Pb: 978-1-138-72444-0 : **£94.99**

Hb: 978-1-138-72478-5 : **£245**

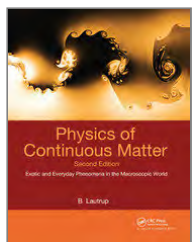
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Soft Condensed Matter Physics in Molecular and Cell Biology



Edited by **W.C.K. Poon**, **David Andelman**

The book provides a thorough grounding in the fundamental nature and properties of soft matter, and then explores its application in biology, especially with regard to DNA investigations, and the study of protein behavior. The final section of the book considers experimental techniques, covering single molecule force spectroscopy of proteins, the use of optical tweezers, and solution scattering.

CRC Press

October 2019 : 344pp

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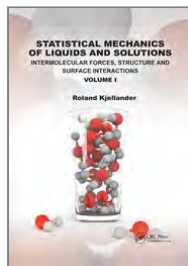
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Statistical Mechanics of Liquids and Solutions

Intermolecular Forces, Structure and Surface Interactions Volume I



Roland Kjellander University of Gothenburg, Sweden

This book shows how you can start from basic laws for the interactions and motions of microscopic particles and calculate how macroscopic systems of these particles behave, thereby explaining properties of matter at the scale that we perceive. Using this microscopic, molecular approach, the text emphasizes clarity of physical explanations for phenomena and mechanisms relevant to fluids, addressing the structure and behavior of liquids and solutions under various conditions. A notable feature is the author's treatment of forces between particles that include nanoparticles, macroparticles, and surfaces.

CRC Press

February 2020 : 528pp

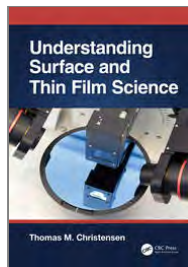
Pb: 978-0-367-47790-5 : **£50.99**

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Understanding Surface and Thin Film Science



Thomas M. Christensen University of Colorado at Colorado Springs, USA

This book is a conceptual overview of surface and thin film science, providing a basic and straightforward understanding of the most common ideas and methods used in these fields. Fundamental scientific ideas, deposition methods and characterization methods are all examined. Thin film science is a natural extension of surface science, especially as applications involve thinner and thinner films; distinct from other literature in the field, this book combines the two topics in a single volume. Simple, conceptual models and figures are used, supported by some mathematical expressions, to convey key ideas to students as well as practicing engineers, scientists, and technicians.

CRC Press

June 2025 : 372pp

Pb: 978-1-032-39215-8 : **£52.99**

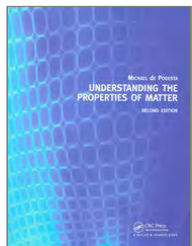
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Michael de Podesta National Physics Laboratory,
Middlesex, UK

Understanding the Properties of Matter: 2nd Edition is an entertaining and innovative textbook that fulfills the needs of undergraduate physics students and teachers alike. Taking a unique phenomenological approach, this book introduces the properties of matter. After an overview of basic ideas and a reminder of the importance of measurement, the author explores gases, solids, liquids, and phase changes. Students benefit from extensive examples and end-of-chapter exercises, and this edition includes an entire chapter of extended exercises. This approach allows both students and teachers to rediscover a fascination for the subjects that have excited some of the greatest physicists of our age.

CRC Press

April 2002 : 450pp

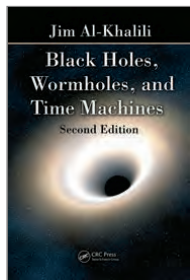
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Black Holes, Wormholes and Time Machines



Jim Al-Khalili University of Surrey, England, UK

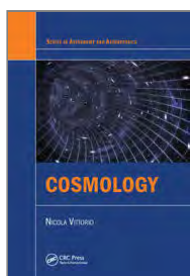
Series: *Discovering Physics*

While retaining the popular format and style of its best-selling predecessor, this second edition explores the latest developments in high-energy astroparticle physics and Big Bang cosmology. It continues to make the ideas and theories of modern physics easily understood by anyone. Complex concepts, such as quantum mechanics, are explained simply, without the use of scientific jargon. The book takes readers on a journey through space and time, covering space warps, time travel, parallel universes, and other fascinating topics in physics.

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December 2011 : 206pp
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Cosmology



Nicola Vittorio

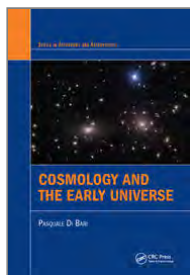
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Modern cosmology has changed significantly over the years, from the discovery to the precision measurement era. The time is right for a fresh new textbook which captures the state-of-the art in cosmology. Written by one of the world's leading cosmologists, this brand new, thoroughly class-tested textbook provides graduate and undergraduate students with coverage of the very latest developments and experimental results in the field. Prof. Nicola Vittorio shows what is meant by precision cosmology, from both theoretical and observational perspectives.

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June 2020 : 454pp
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Cosmology and the Early Universe



Pasquale Di Bari

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This book discusses cosmology from both an observational and a strong theoretical perspective. The first part focuses on gravitation, notably the expansion of the universe and determination of cosmological parameters, before moving onto the main emphasis of the book, the physics of the early universe, and the connections between cosmological models and particle physics. Readers will gain a comprehensive account of cosmology and the latest observational results, without requiring prior knowledge of relativistic theories, making the text ideal for students.

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June 2020 : 259pp
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Cosmology for Physicists



David Lyth

Series: *Series in Astronomy and Astrophysics*

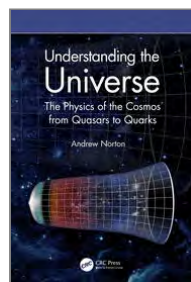
Written by an award-winning cosmologist, this brand new textbook provides advanced undergraduate and graduate students with coverage of the very latest developments in the field. Full treatment of the origin of structure, scalar fields, the cosmic microwave background and the early universe are provided. Problems are included, with solutions in a separate solutions manual. More advanced extension material is offered in the Appendix, ensuring the book is fully accessible to students with a wide variety of background experience.

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Understanding the Universe

The Physics of the Cosmos from Quasars to Quarks



Andrew Norton

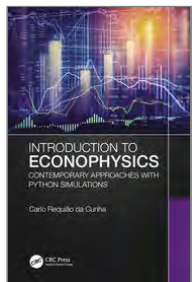
Understanding the Universe: The Physics of the Cosmos from Quasars to Quarks explores how all areas of physics, from the very smallest scales to the very largest, come together to form our current understanding of the Universe. It takes readers on a fascinating journey, from the Big Bang and how the Universe has evolved, to how it appears now, and the possibilities for how it will continue to evolve in the future. It also explores the latest exciting developments in the area and how they impact our understanding of the Universe, such as quantum chromodynamics, black holes, dark energy, and gravitational waves.

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May 2023 : 252pp
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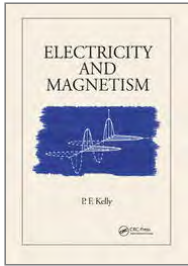
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CRC Press

March 2021 : 418pp

Pb: 978-0-367-78369-3 : **£50.99**

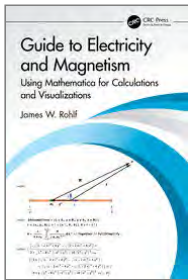
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Guide to Electricity and Magnetism

Using Mathematica for Calculations and Visualizations



James W. Rohlif

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CRC Press

March 2024 : 232pp

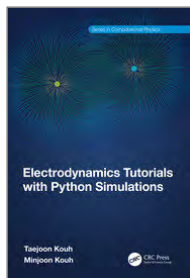
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CRC Press

April 2024 : 294pp

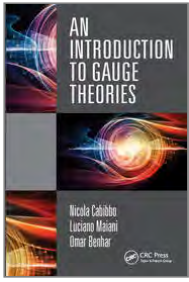
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An Introduction to Gauge Theories



Nicola Cabibbo , Luciano Maiani , Omar Benhar

Written by world-leading experts in particle physics, this new book from Luciano Maiani and Omar Benhar, with contributions from the late Nicola Cabibbo, is based on Feynman's path integrals. Key elements of gauge theories are described — Feynman diagrams, gauge-fixing, Faddeev-Popov ghosts — as well as renormalization in Quantum Electrodynamics. Quarks and QCD interactions are introduced. Renormalization group and high momentum behaviour of the coupling constants is discussed in QED and QCD, with asymptotic freedom derived at one-loop. These concepts are related to the Higgs boson and models of grand unification.

CRC Press
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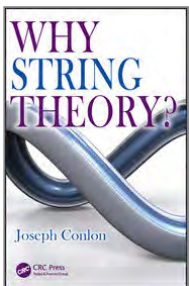
Ian J.R. Aitchison Prof. Em., Univ. of Oxford, **Anthony J.G. Hey** Microsoft Research Connections, Redmond, Washington, USA

The fifth edition of this well-established, highly regarded two-volume set continues to provide a fundamental introduction to advanced particle physics while incorporating substantial new experimental results, especially in the areas of the Higgs and top quark sectors, as well as CP violation and neutrino oscillations. It offers an accessible and practical introduction to the three gauge theories comprising the Standard Model of particle physics: quantum electrodynamics (QED), quantum chromodynamics (QCD), and the Glashow-Salam-Weinberg (GSW) electroweak theory.

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Why String Theory?



Joseph Conlon Professor of Theoretical Physics, University of Oxford and Fellow of New College

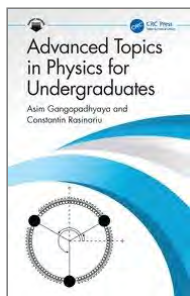
Series: Discovering Physics

This popular science book offers a highly readable and accessible panorama of the who, what, and why of string theory. The author, a theoretical physics professor at the University of Oxford and a leading string theorist, explains what string theory is and where it originated. He describes how string theory fits into physics and why so many physicists and mathematicians find it appealing when working on topics from M-theory to monsters and from cosmology to superconductors.

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November 2015 : 260pp
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Advanced Topics in Physics for Undergraduates



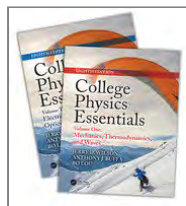
Asim Gangopadhyaya Loyola University Chicago, USA,
Constantin Rasinariu Loyola University Chicago, USA

This book explores classical mechanics, electrodynamics, and quantum mechanics beyond the standard introductory courses. Designed to support departments with limited resources, this book integrates these advanced topics into a single, cohesive volume, offering students a unified perspective on fundamental physical principles. This book serves as an invaluable guide for undergraduate students seeking to deepen their knowledge of physics, preparing them for further academic study or careers in physics and related fields. Its clear explanations and structured approach make it accessible to learners looking to advance their understanding beyond traditional coursework.

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Hb: 978-0-367-77582-7 : **£96.99**
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College Physics Essentials, Eighth Edition (Two-Volume Set)



Jerry D. Wilson , Anthony J. Buffa , Bo Lou

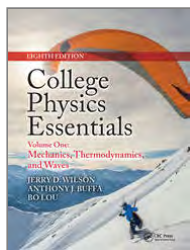
This edition provides a streamlined update of a major textbook for algebra-based physics, reflecting the demand by instructors for more substance. The authors enhance emphasis on worked examples to enhance reader engagement, together with expanded problem sets that build from conceptual understanding to numerical solutions and real-world applications. It is the textbook of choice for those seeking a basic understanding of key physics concepts and how to apply them to real problems. The first volume covers mechanics, solids and fluids, heat, thermodynamics, vibrations and waves, and sound. The second volume covers electricity and magnetism, optics, atomic, nuclear, and quantum physics.

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College Physics Essentials, Eighth Edition

Mechanics, Thermodynamics, Waves (Volume One)



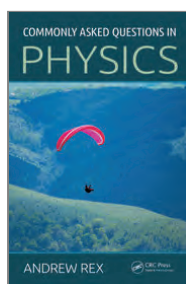
Jerry D. Wilson , Anthony J. Buffa , Bo Lou

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CRC Press
June 2022 : 408pp
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Commonly Asked Questions in Physics



Andrew Rex University of Puget Sound, Tacoma, Washington, USA

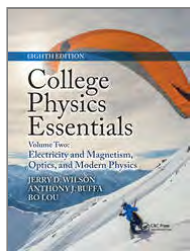
Suitable for a wide audience, this book covers a broad scope of subjects, from classical physics that goes back to the age of Newton to new ideas just formulated in the twenty-first century. The book highlights the core areas of physics that predate the twentieth century, including mechanics, electromagnetism, optics, and thermodynamics. It also focuses on modern physics, covering quantum mechanics, atomic and nuclear physics, fundamental particles, and relativity.

CRC Press
February 2014 : 256pp
Pb: 978-1-466-56017-8 : **£31.99**
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College Physics Essentials, Eighth Edition

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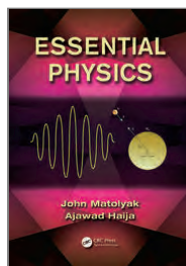
Jerry D. Wilson , Anthony J. Buffa , Bo Lou

This edition provides a streamlined update of a major textbook for algebra-based physics, reflecting the demand by instructors for more substance. The authors enhance emphasis on worked examples to enhance reader engagement, together with expanded problem sets that build from conceptual understanding to numerical solutions and real-world applications. It is the textbook of choice for those seeking a basic understanding of key physics concepts and how to apply them to real problems. The first volume covers mechanics, solids and fluids, heat, thermodynamics, vibrations and waves, and sound. The second volume covers electricity and magnetism, optics, atomic, nuclear, and quantum physics.

CRC Press
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Essential Physics



John Matolyak Emeritus Professor, Indiana University of Pennsylvania, USA, **Ajawad I. Hajja** Indiana University of Pennsylvania, USA

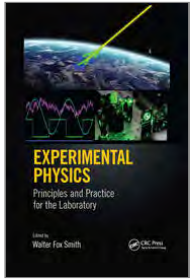
This book is designed for an algebra-based course in physics for non-physics majors and provides a thorough understanding of the fundamentals of essential physics. It omits material often found in much larger texts that cannot be covered in a yearlong course and is not needed for non-physics majors. Instead, this text focuses on providing a solid understanding of fundamental physics and physical principles. Each topic includes worked examples. Math is introduced as necessary, with an emphasis on applications in fields including some biology and chemistry.

CRC Press
December 2013 : 472pp
Hb: 978-1-466-57521-9 : **£125**
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Experimental Physics

Principles and Practice for the Laboratory



Edited by **Walter Fox Smith**

This textbook provides the underlying knowledge and skills needed to understand and utilize the most common and important experimental and data analysis techniques in physics. The reader is presented with the tools to design, assemble, and debug experimental apparatus, and to use it to take meaningful data. The contents start with an introduction to key topics such as troubleshooting, statistical methods, and the scientific method, then progressing through a sequence of experiments that encompass each major subfield of physics. Experiments lay out background theory, procedures and equipment, conceptual questions, safety instructions, examples, and troubleshooting exercises.

CRC Press
June 2022 : 452pp
Pb: 978-1-032-33665-7 : **£54.99**
Hb: 978-1-498-77847-3 : **£140**
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Anthony C. Fischer-Cripps Fischer-Cripps Laboratories Pty Ltd, Sydney, Australia

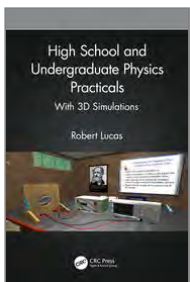
Taking the same signature approach, these books use clear writing and a visual presentation to make the material suitable for students in any country, including those with English as a second language. The author has now extended the coverage of The Physics Companion, The Electronics Companion, The Mathematics Companion, and The Materials Physics Companion and updated them where necessary, building on the outstanding success of the first editions. Along with these volumes, the set contains The Chemistry Companion.

CRC Press
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High School and Undergraduate Physics Practicals

With 3D Simulations



Robert Lucas

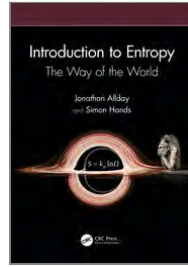
This book describes more than thirty physics practicals at high school and undergraduate levels with background information on each one, a description of the equipment needed, and instructions on how the experiment is performed. Uniquely, for those without access to a real laboratory, the book provides access to highly detailed 3D simulations of all the experiments. Uniquely, for those without access to a real laboratory, the book gives you access to highly detailed 3d simulations of all the experiments.

CRC Press
May 2022 : 246pp
Pb: 978-1-032-19739-5 : **£54.99**
Hb: 978-1-032-20129-0 : **£145**
eBook: 978-1-003-26235-0

* For full contents and more information, visit: www.routledge.com/9781032197395

Introduction to Entropy

The Way of the World



Jonathan Allday The Royal Hospital School, Ipswich, UK,
Simon Hands

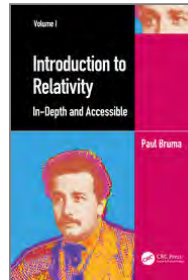
This book will draw these diverse threads together and present entropy as one of the crucial physical concepts. It will cover a range of different applications of entropy, from the classical theory of thermodynamics, the statistical approach, entropy in quantum theory, information theory and finally its manifestation in black hole physics. Each will be presented in a manner suitable for both undergraduates and interested laypersons with no previous knowledge. The book will take an overview of these areas and see to what extent the concept of entropy is being treated in the same way in each, and also how it differs.

CRC Press
October 2024 : 358pp
Pb: 978-0-367-63866-5 : **£47.99**
Hb: 978-0-367-63868-9 : **£140**
eBook: 978-1-003-12105-3

* For full contents and more information, visit: www.routledge.com/9780367638665

Introduction to Relativity Volume I

In-Depth and Accessible



Paul Bruma

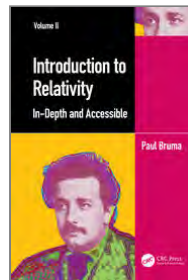
$E=mc^2$ is known as the most famous but least understood equation in physics. This two-volume textbook illuminates this equation and much more through clear and detailed explanations, new demonstrations, a more physical approach, and a deep analysis of the concepts and postulates of Relativity. It fills a gap in the literature by drawing out the physical aspects and consequences of Relativity, which are otherwise often second place to the mathematical aspects. Its concrete focus on physics allows students to gain a full understanding of the underlying concepts and cornerstones of Relativity.

CRC Press
December 2024 : 262pp
Pb: 978-1-032-06243-3 : **£48.99**
Hb: 978-1-032-05674-6 : **£83.99**
eBook: 978-1-003-20133-5

* For full contents and more information, visit: www.routledge.com/9781032062433

Introduction to Relativity Volume II

In-Depth and Accessible



Paul Bruma

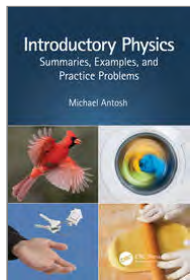
$E=mc^2$ is known as the most famous but least understood equation in physics. This two-volume textbook illuminates this equation and much more through clear and detailed explanations, new demonstrations, a more physical approach, and a deep analysis of the concepts and postulates of Relativity. It fills a gap in the literature by drawing out the physical aspects and consequences of Relativity, which are otherwise often second place to the mathematical aspects. Its concrete focus on physics allows students to gain a full understanding of the underlying concepts and cornerstones of Relativity.

CRC Press
December 2024 : 286pp
Pb: 978-1-032-06244-0 : **£47.99**
Hb: 978-1-032-05676-0 : **£83.99**
eBook: 978-1-003-20135-9

* For full contents and more information, visit: www.routledge.com/9781032062440

Introductory Physics

Summaries, Examples, and Practice Problems



Michael Antosh University of Rhode Island

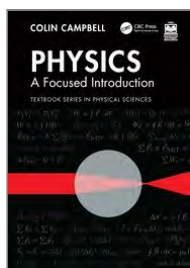
This textbook covers topics related to units, kinematics, forces, energy, momentum, circular and rotational motion, Newton's general equation for gravity, and simple harmonic motion (things that go back and forth). A math review is also included, with a focus on algebra and trigonometry. This book is a very useful study guide for students in introductory physics courses, particularly high school and college students in an algebra-based introductory physics course, and even students in an introductory calculus-level course. It can also be used as a standalone textbook in courses where derivations are not emphasized.

CRC Press
February 2023 : 408pp
Pb: 978-0-367-43423-6 : **£48.99**
Hb: 978-0-367-43685-8 : **£130**
eBook: 978-1-003-00504-9

* For full contents and more information, visit: www.routledge.com/9780367434236

Physics

A Focused Introduction



Colin Campbell

Series: Textbook Series in Physical Sciences

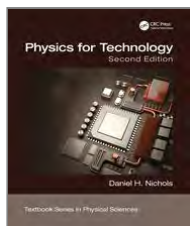
Physics: A Focused Introduction provides a thorough introduction to the principles and practical applications of introductory undergraduate physics. Featuring a streamlined narrative, it encourages active engagement between fundamental concepts and fully worked examples. Major topics such as motion (kinematics, forces, and conservation of momentum and energy), thermodynamics, waves, optics, electricity and magnetism are covered, in addition to the foundations of modern physics. This textbook is suitable for students of science and engineering who require a concise introduction to the field, as well as students of both algebra-based and calculus-based courses.

CRC Press
November 2025 : 732pp
Pb: 978-1-032-94588-0 : **£65.99**
Hb: 978-1-032-94587-3 : **£190**
eBook: 978-1-003-57156-8

* For full contents and more information, visit: www.routledge.com/9781032945880

2ND EDITION

Physics for Technology, Second Edition



Daniel H. Nichols

Series: Textbook Series in Physical Sciences

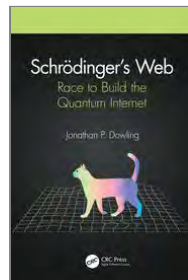
This text provides an introduction to the important physics underpinning current technologies, highlighting key concepts in areas that include linear and rotational motion, energy, work, power, heat, temperature, fluids, waves, and magnetism. This revision reflects the latest technology advances, from smart phones to the Internet of Things, and all kinds of sensors. The author also provides more modern worked examples with useful appendices and laboratories for hands-on practice. There are also two brand new chapters covering sensors as well as electric fields and electromagnetic radiation as applied to current technologies.

CRC Press
March 2021 : 432pp
Pb: 978-0-367-78059-3 : **£50.99**
Hb: 978-0-815-38292-8 : **£140**
eBook: 978-1-351-20727-0

* For full contents and more information, visit: www.routledge.com/9780367780593

Schrödinger's Web

Race to Build the Quantum Internet



Jonathan P. Dowling Louisiana State University, Baton Rouge, USA

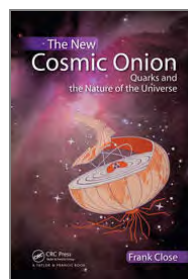
As the race to build the world's first quantum computer is coming to an end, the race to build the quantum internet is just starting. This book leverages the author's unique insights into both the Chinese and American quantum programs. It begins with the physics and history of the quantum internet and ends with the latest results in quantum computing and quantum networks. Written by a renowned quantum physicist, this book is for everyone who is interested in the rapidly advancing field of Quantum Technology — The Second Quantum Revolution.

CRC Press
August 2020 : 314pp
Pb: 978-0-367-32231-1 : **£38.99**
Hb: 978-0-367-33761-2 : **£190**
eBook: 978-0-367-33762-9

* For full contents and more information, visit: www.routledge.com/9780367322311

The New Cosmic Onion

Quarks and the Nature of the Universe



Frank Close University of Oxford, UK

Series: Discovering Physics

Not since Newton's apple has there been a physics phenomenon as deliciously appealing to the masses as Frank Close's Cosmic Onion. Widely embraced by scientists and laypersons alike, the book quickly became an international bestseller, has been translated into seven languages, and propelled the author to become a recognized popular science celebrity around the world. Much has changed since the original publication in 1983, and The New Cosmic Onion was extensively revised and updated to reflect our new view of the universe. Keeping the best contents from the previous work, this new edition includes extensive new material explaining the scientific challenges at the start of this century.

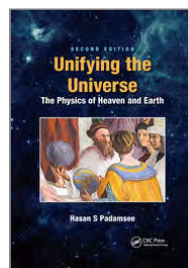
CRC Press
December 2006 : 232pp
Pb: 978-1-584-88798-0 : **£51.99**
Hb: 978-1-138-42970-3 : **£200**
eBook: 978-0-429-13855-3

* For full contents and more information, visit: www.routledge.com/9781584887980

2ND EDITION

Unifying the Universe

The Physics of Heaven and Earth



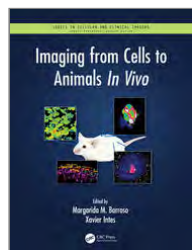
Hasan S. Padamsee

Unifying the Universe: The Physics of Heaven and Earth provides a solid background in basic physics. With a humanistic perspective, it shows how science is significant for more than its technological consequences. Fully updated throughout, with a new chapter on the 'Quantum World' and supplementary video resources, this new edition includes clear and well-planned links to the arts and philosophies of relevant historical periods to bring science and the humanities together.

CRC Press
September 2021 : 508pp
Pb: 978-1-032-17481-5 : **£50.99**
Hb: 978-1-138-38868-0 : **£94.99**
eBook: 978-0-429-42441-0

* For full contents and more information, visit: www.routledge.com/9781032174815

Imaging from Cells to Animals In Vivo



Edited by **Margarida Barroso, Xavier Intes**

Series: *Series in Cellular and Clinical Imaging*

This book offers an overview of imaging techniques used to investigate cells and tissue in their native environment. It covers the range of imaging approaches used, as well as the application of those techniques to the study of biological processes in cells and whole tissues within living organisms. Among the areas covered are cell metabolism, receptor-ligand interactions, membrane trafficking, cell signaling, cell migration, cell adhesion, cytoskeleton and other processes using intra-vital microscopy and optical and molecular imaging in living organisms such as mice and zebrafish.

CRC Press

May 2023 : 370pp

Pb: 978-0-367-56638-8 : **£48.99**

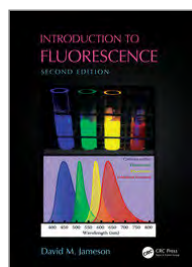
Hb: 978-1-138-04109-7 : **£195**

eBook: 978-1-315-17466-2

* For full contents and more information, visit: www.routledge.com/9780367566388

2ND EDITION

Introduction to Fluorescence



David M. Jameson University of Hawaii, Manoa, USA

This Second Edition of Introduction to Fluorescence helps readers acquire a sound understanding of basic fluorescence theory and practice. It describes general principles in a straightforward way and uses examples from a variety of disciplines to demonstrate them. Since the 1st Edition, significant advances in the field have appeared. For example phasors, both lifetime and spectral phasors, have become very popular and so a chapter dedicated to this topic has been added. Furthermore, significant advances have been made in fluorescence microscopy methods, including super-resolution and single molecule techniques.

CRC Press

March 2025 : 392pp

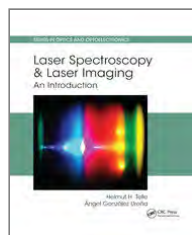
Hb: 978-1-032-26171-3 : **£78.99**

eBook: 978-1-003-29658-4

* For full contents and more information, visit: www.routledge.com/9781032261713

Laser Spectroscopy and Laser Imaging

An Introduction



Helmut H. Telle, Ángel González Ureña

Series: *Series in Optics and Optoelectronics*

Developments in and applications of laser spectroscopy and laser imaging are growing rapidly, specifically now that spectral analytical methodologies are merging with laser imaging techniques. It is the intention of this book to provide researchers, both in industry and academia, with a concise collection of laser analysis and imaging techniques. Written by two leaders in the field, it will introduce the reader to individual techniques in a tutorial-fashion and provide key examples and including details of the latest techniques.

CRC Press

December 2019 : 750pp

Pb: 978-0-367-86821-5 : **£78.99**

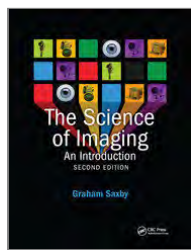
Hb: 978-1-466-58822-6 : **£190**

eBook: 978-1-315-15698-9

* For full contents and more information, visit: www.routledge.com/9780367868215

2ND EDITION

The Science of Imaging



Graham Saxby

Updated and expanded to keep pace with the digital revolution, the new edition of this critically acclaimed work provides a comprehensive exploration of imaging science. Extensively illustrated, the second edition covers the fundamental laws of physics as well as the cutting-edge techniques defining the field. This accessible introduction takes readers on a grand tour of imaging. Starting with the fundamentals of light and basic cameras, the author journeys through television and holography to advanced scientific and medical imaging. He highlights essential formulas, while keeping the complex mathematics to a minimum.

CRC Press

September 2020 : 352pp

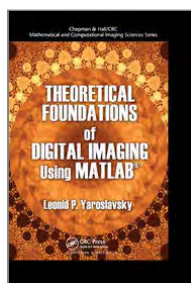
Pb: 978-0-367-86446-0 : **£50.99**

Hb: 978-1-439-81286-0 : **£94.99**

eBook: 978-0-429-13191-2

* For full contents and more information, visit: www.routledge.com/9780367864460

Theoretical Foundations of Digital Imaging Using MATLAB



Leonid P. Yaroslavsky

Series: *Chapman & Hall/CRC Mathematical and Computational Imaging Sciences Series*

Helping readers master digital imaging, this text presents a unified theoretical basis for understanding and designing methods of imaging and image processing. Designed for newcomers to imaging science and engineering, the book covers the subject in its entirety, from image formation to image perfecting. The author avoids using heavy mathematics and derives all formulas in full detail. To facilitate a deeper understanding of the major results, the book includes a number of exercises supported by MATLAB® programs, with the code available at www.crcpress.com.

CRC Press

September 2020 : 516pp

Pb: 978-0-367-86626-6 : **£65.99**

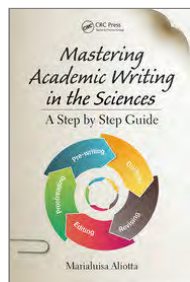
Hb: 978-1-439-86140-0 : **£125**

eBook: 978-0-429-07415-8

* For full contents and more information, visit: www.routledge.com/9780367866266

Mastering Academic Writing in the Sciences

A Step-by-Step Guide



Marialuisa Aliotta

This book provides a comprehensive and coherent step-by-step guide to writing in scientific academic disciplines. It is an invaluable resource for those working on a PhD thesis, research paper, dissertation, or report. Writing these documents can be a long and arduous experience for students and their supervisors, and even for experienced researchers. However, this book can hold the key to success. Mapping the steps involved in the writing process - from acquiring and organizing sources of information, to revising early drafts, to proofreading the final product - it provides clear guidance on what to write and how best to write it.

CRC Press

April 2018 : 200pp

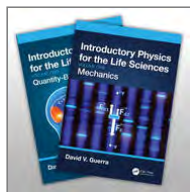
Pb: 978-1-498-70147-1 : **£52.99**

Hb: 978-1-138-74288-8 : **£140**

eBook: 978-1-351-00214-1

* For full contents and more information, visit: www.routledge.com/9781498701471

Introductory Physics for the Life Sciences - Two-Vol. Set



David V. Guerra

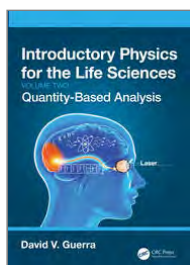
This textbook provides an accessible introduction to physics for undergraduate students in the life sciences, including those majoring in all branches of biology, biochemistry, and psychology and students working on pre-professional programs such as pre-medical, pre-dental, and physical therapy. The text is geared for the algebra-based physics course, often named College Physics in the United States. The order of topics studied are such that most of the problems in the text can be solved with the methods of Statics or Dynamics. That is, they require a free body diagram, the application of Newton's Laws, and any necessary kinematics.

CRC Press
June 2023 : 932pp
Pb: 978-1-032-49093-9 : **£121.98**
Hb: 978-1-032-49091-5 : **£300**

* For full contents and more information, visit: www.routledge.com/9781032490939

Introductory Physics for the Life Sciences: (Volume 2)

Quantity-Based Analysis



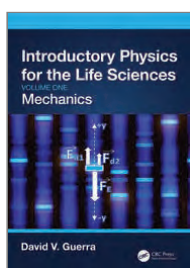
David V. Guerra

This textbook provides an accessible introduction to physics for undergraduate students in the life sciences, including those majoring in all branches of biology, biochemistry, and psychology and students working on pre-professional programs such as pre-medical, pre-dental, and physical therapy. The text is geared for the algebra-based physics course, often named College Physics in the United States. The order of topics studied in this volume require students to first understand a concept, such as the conservation of energy, momentum, voltage, or current, the change in a quantity such as entropy, or the rules of ray and wave optics.

CRC Press
June 2023 : 288pp
Pb: 978-1-032-31108-1 : **£60.99**
Hb: 978-1-032-30041-2 : **£155**
eBook: 978-1-003-30807-2

* For full contents and more information, visit: www.routledge.com/9781032311081

Introductory Physics for the Life Sciences: Mechanics (Volume One)



David V. Guerra

This textbook provides an accessible introduction to physics for undergraduate students in the life sciences, including those majoring in all branches of biology, biochemistry, and psychology and students working on pre-professional programs such as pre-medical, pre-dental, and physical therapy. The text is geared for the algebra-based physics course, often named College Physics in the United States. The order of topics studied are such that most of the problems in the text can be solved with the methods of Statics or Dynamics. That is, they require a free body diagram, the application of Newton's Laws, and any necessary kinematics.

CRC Press
May 2023 : 258pp
Pb: 978-1-032-31106-7 : **£60.99**
Hb: 978-1-032-30040-5 : **£145**
eBook: 978-1-003-30806-5

* For full contents and more information, visit: www.routledge.com/9781032311067

2ND EDITION

Fundamentals of Fibre Reinforced Composite Materials



A.R. Bunsell Centre des Matériaux, Pierre-Marie Fourt, France

Series: Series in Materials Science and Engineering

This second edition of *Fundamentals of Fibre Reinforced Composite Materials* has been fully updated throughout, providing an authoritative and modern introduction to the topic with a brief history of composite development, a review of composite applications, manufacture and markets, types of fibres and matrices used, and their properties with a detailed introduction into the computer simulation of composite behaviour.

CRC Press

September 2022 : 360pp

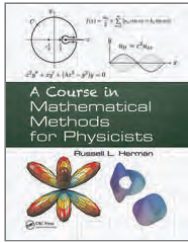
Pb: 978-0-367-74433-5 : **£50.99**

Hb: 978-0-367-02373-7 : **£140**

eBook: 978-0-429-39990-9

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A Course in Mathematical Methods for Physicists



Russell L. Herman University of North Carolina, Wilmington, USA

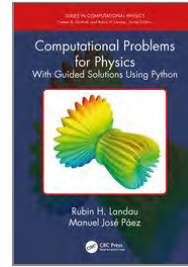
Based on the author's junior-level undergraduate course, this classroom-tested textbook is designed for an introductory one-semester course in mathematical physics. Focusing on the physics of oscillations and waves, it helps students understand the mathematical techniques needed for their future studies in physics. The book introduces the methods while studying one underlying theme from physics. It takes a bottom-up approach that emphasizes physical applications of the mathematics.

CRC Press
December 2013 : 776pp
Pb: 978-1-466-58467-9 : **£78.99**
Hb: 978-1-138-44208-5 : **£200**
eBook: 978-0-429-08891-9

* For full contents and more information, visit: www.routledge.com/9781466584679

Computational Problems for Physics

With Guided Solutions Using Python



Rubin H. Landau Distinguished Professor Emeritus, Oregon State University, USA, **Manuel José Páez**

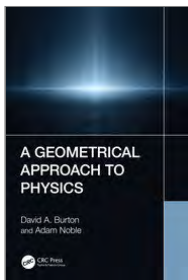
Series: *Series in Computational Physics*

Our future scientists and professionals must be conversant in computational techniques. In order to facilitate integration of computer methods into existing physics courses, this textbook offers a large number of worked examples and problems with fully guided solutions in Python as well as other languages (Mathematica, Java, C, Fortran, and Maple) on the Web. It's also intended as a self-study guide for learning how to use computer methods in physics. The authors include an introductory chapter on numerical tools and indication of computational as well as a separate chapter with problems for beginning students.

CRC Press
June 2018 : 430pp
Pb: 978-1-138-70541-8 : **£78.99**
Hb: 978-1-138-70591-3 : **£125**
eBook: 978-1-315-20209-9

* For full contents and more information, visit: www.routledge.com/9781138705418

A Geometrical Approach to Physics



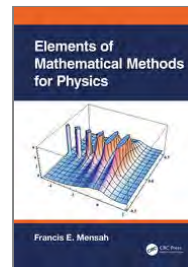
David A. Burton, **Adam Noble**

The purpose of the book is to act as a 'gateway' to more advanced books on the applications of differential geometry in physics. It will also help the reader to better appreciate modern physics research that makes use of differential geometry, and the common features that permeate the discipline as a whole.

CRC Press
March 2024 : 202pp
Pb: 978-1-032-12928-0 : **£51.99**
Hb: 978-1-032-13380-5 : **£140**
eBook: 978-1-003-22894-3

* For full contents and more information, visit: www.routledge.com/9781032129280

Elements of Mathematical Methods for Physics



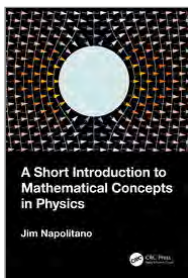
Francis E. Mensah

"Elements of Mathematical Methods for Physics" provides students with an approachable and innovative introduction to key concepts of Mathematical Physics, accompanied by clear and concise explanations, relevant real-world examples, and problems that help them to master the fundamentals of Mathematical Physics. The topics are presented at a basic level, for students lacking a prior mathematical background.

CRC Press
August 2024 : 398pp
Hb: 978-1-032-76222-7 : **£86.99**
eBook: 978-1-003-47881-2

* For full contents and more information, visit: www.routledge.com/9781032762227

A Short Introduction to Mathematical Concepts in Physics



Jim Napolitano Temple University, Pennsylvania, USA

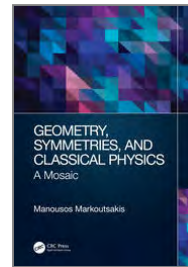
Mathematics is the language of physics and yet, mathematics is an enormous subject. This textbook provides an accessible and concise introduction to mathematical physics for undergraduate students taking a one semester course. It assumes the reader has studied a year of introductory physics and three semesters of basic calculus, including some vector calculus, but no formal training in differential equations or matrix algebra. It equips readers with the skills and foundational knowledge they need for courses that follow in classical mechanics, electromagnetism, quantum mechanics, and thermal physics.

CRC Press
January 2024 : 242pp
Pb: 978-1-032-40430-1 : **£56.99**
Hb: 978-1-032-40977-1 : **£155**
eBook: 978-1-003-35565-6

* For full contents and more information, visit: www.routledge.com/9781032404301

Geometry, Symmetries, and Classical Physics

A Mosaic



Manousos Markoutsakis

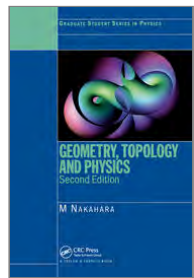
This book provides advanced undergraduate physics and mathematics students with an accessible yet detailed understanding of the fundamentals of differential geometry and symmetries in classical physics.

CRC Press
January 2024 : 482pp
Pb: 978-0-367-54141-5 : **£49.99**
Hb: 978-0-367-53523-0 : **£155**
eBook: 978-1-003-08774-8

* For full contents and more information, visit: www.routledge.com/9780367541415

2ND EDITION

Geometry, Topology and Physics



Mikio Nakahara Kinki University, Osaka, Japan

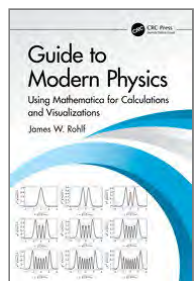
This book provides an introduction to the ideas and techniques of differential geometry and topology. It starts with a brief survey of quantum field theory, gauge theory, general relativity, vector spaces, and topology. Using many illustrations, exercises, and problems, the author demonstrates more elaborate concepts of topology and geometry, including fiber bundles, characteristic classes, and index theorems. New to this second edition is the proof of the index theorem in terms of supersymmetric quantum mechanics. The final two chapters examine anomalies in gauge field theories and the analysis of Polakov's bosonic string theory from the geometrical point of view.

CRC Press
June 2003 : 596pp
Pb: 978-0-750-30606-5 : £94.99
Hb: 978-1-138-41336-8 : £200
eBook: 978-1-315-27582-6

* For full contents and more information, visit: www.routledge.com/9780750306065

Guide to Modern Physics

Using Mathematica for Calculations and Visualizations



James W. Rohlf

This is a "how to guide" for making beginning calculations in modern physics. The academic level is second year college physical science and engineering students. The calculations are performed in Mathematica, and stress graphical visualization, units, and numerical answers.

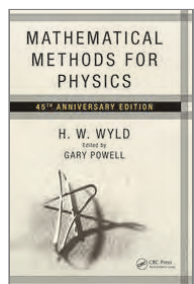
CRC Press
November 2023 : 218pp
Pb: 978-1-032-49686-3 : £49.99
Hb: 978-1-032-49801-0 : £135
eBook: 978-1-003-39551-5

* For full contents and more information, visit: www.routledge.com/9781032496863

2ND EDITION

Mathematical Methods for Physics

45th anniversary edition



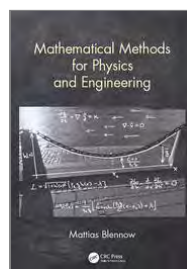
H.W. Wylde, Gary Powell

From classical mechanics and classical electrodynamics to modern quantum mechanics many physical phenomena are formulated in terms of similar partial differential equations while boundary conditions determine the specifics of the problem. Mathematical Methods for Physics demonstrates how many physics problems resolve into similar inhomogeneous partial differential equations and the mathematical techniques for solving them.

CRC Press
May 2022 : 476pp
Pb: 978-0-367-47973-2 : £54.99
Hb: 978-0-367-47708-0 : £140
eBook: 978-1-003-03746-0

* For full contents and more information, visit: www.routledge.com/9780367479732

Mathematical Methods for Physics and Engineering



Mattias Blennow KTH Royal Institute of Technology, Stockholm, Sweden

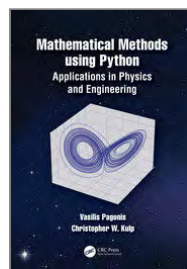
Suitable for advanced undergraduate and graduate students, this new textbook contains an introduction to the mathematical concepts used in physics and engineering. The entire book is unique in that it draws upon applications from physics, rather than mathematical examples, to ensure students are fully equipped with the tools they need. This approach prepares the reader for advanced topics, such as quantum mechanics and general relativity, while offering examples, problems, and insights into classical physics. The book is also distinctive in the coverage it devotes to modelling, and to oft-neglected topics such as Green's functions.

CRC Press
December 2017 : 760pp
Pb: 978-1-138-05688-6 : £120
Hb: 978-1-138-05690-9 : £275
eBook: 978-1-315-16509-7

* For full contents and more information, visit: www.routledge.com/9781138056886

Mathematical Methods using Python

Applications in Physics and Engineering



Vasilis Pagonis McDaniel College, Westminster, MD, USA
Christopher W. Kulp Lycoming College, Williamsport, PA, USA

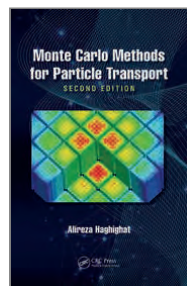
This advanced undergraduate textbook presents a new approach to teaching mathematical methods for scientists and engineers. It provides a practical, pedagogical introduction to utilizing Python in Mathematical and Computational Methods courses. Both analytical and computational examples are integrated from its start.

CRC Press
May 2024 : 504pp
Hb: 978-1-032-27836-0 : £86.99
eBook: 978-1-003-29432-0

* For full contents and more information, visit: www.routledge.com/9781032278360

2ND EDITION

Monte Carlo Methods for Particle Transport



Alireza Haghighat

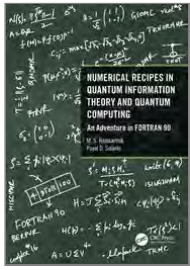
Fully updated with the latest developments in the eigenvalue Monte Carlo calculations and automatic variance reduction techniques and containing an entirely new chapter on fission matrix and alternative hybrid techniques. This second edition explores the uses of the Monte Carlo method for real-world applications, explaining its concepts and limitations.

CRC Press
April 2022 : 310pp
Pb: 978-0-367-53809-5 : £54.99
Hb: 978-0-367-18805-4 : £140
eBook: 978-0-429-19839-7

* For full contents and more information, visit: www.routledge.com/9780367538095

Numerical Recipes in Quantum Information Theory and Quantum Computing

An Adventure in FORTRAN 90



M.S. Ramkarthik Visvesvaraya National Institute of Technology, India, **Payal D. Solanki** Visvesvaraya National Institute of Technology

This first of a kind textbook provides computational tools in Fortran 90 that are fundamental to quantum information, quantum computing, linear algebra and one dimensional spin half condensed matter systems. Over 160 subroutines are included, and the numerical recipes are aided by detailed flowcharts. Suitable for beginner and advanced readers alike, students and researchers will find this textbook to be a helpful guide and a compendium.

CRC Press

October 2024 : 424pp

Pb: 978-0-367-75931-5 : **£48.99**

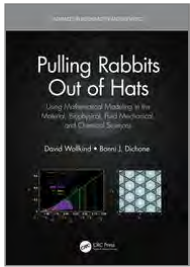
Hb: 978-0-367-75928-5 : **£105**

eBook: 978-1-003-16467-8

* For full contents and more information, visit: www.routledge.com/9780367759315

Pulling Rabbits Out of Hats

Using Mathematical Modeling in the Material, Biophysical, Fluid Mechanical, and Chemical Sciences



David Wollkind, **Bonni J. Dichone** Gonzaga University

Series: Advances in Biochemistry and Biophysics

Pulling Rabbits Out of Hats: Using Mathematical Modeling in the Material, Biophysical, Fluid Mechanical, and Chemical Sciences focuses on those assumptions made during applied mathematical modeling in which the phenomenological data and the model predictions are self-consistent. This comprehensive reference demonstrates how to employ a variety of mathematical techniques to quantify a number of problems from the material, biophysical, fluid mechanical, and chemical sciences. In doing so, methodology of modelling, analysis, and result generation are all covered.

CRC Press

October 2024 : 554pp

Pb: 978-1-032-05007-2 : **£48.99**

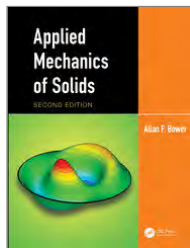
Hb: 978-1-032-04787-4 : **£195**

eBook: 978-1-003-19560-3

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2ND EDITION

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Allan F. Bower Brown University, Providence, Rhode Island, USA

The second edition of Applied Mechanics of Solids provides a concise description of all the concepts needed to predict how solid materials deform and fail under stress. With its companion volume of solved example problems, it is an invaluable class textbook or reference for personal study or review. With the aid of computer simulations, design engineers can predict failure in structural, mechanical, and bio-mechanical components with a few keystrokes. But simulations are built on sophisticated mathematics, physics, and numerical methods, and always involve some judicious approximations. This book contains all the theory needed to make the best use of their simulations.

CRC Press

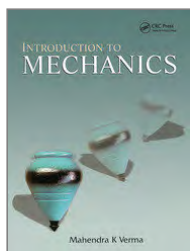
November 2025 : 774pp

Hb: 978-1-041-01995-4 : £96.99

eBook: 978-1-003-61728-0

* For full contents and more information, visit: www.routledge.com/9781041019954

Introduction to Mechanics



Mahendra K. Verma

A modern introduction to Newtonian dynamics and the basics of special relativity, this book discusses standard topics such as Newton's laws of motion, energy, linear and angular momentum, rigid body dynamics, and oscillations, then goes on to introduce modern topics such as symmetries, phase space, nonlinear dynamics and chaos. The author presents Newton's equation of motion as a differential equation, bringing out key issues such as phase space and determinism in mechanical systems and helps introduce modern research topics such as chaos theory in a natural way. He highlights key assumptions of Newtonian mechanics and incorporates numerical solutions of many mechanical systems using MATLAB®.

CRC Press

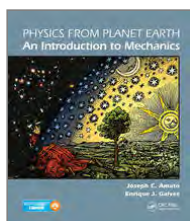
January 2019 : 356pp

Pb: 978-1-138-11677-1 : £23.99

Hb: 978-1-439-80127-7 : £59.99

* For full contents and more information, visit: www.routledge.com/9781138116771

Physics from Planet Earth - An Introduction to Mechanics



Joseph C. Amato Colgate University, Hamilton, New York, USA, **Enrique J. Galvez** Colgate University, Hamilton, New York, USA

This classroom-tested text provides a one-semester, calculus-based introduction to classical mechanics for first-year undergraduate students. The authors introduce the three conservation laws as fundamental laws of nature from which secondary concepts are derived and organize topics around the conservation laws. They also illustrate many topics through real, contemporary applications in astronomy, planetary science, and space travel. The book includes short exercises throughout the text as well as novel problems at the end of each chapter.

CRC Press

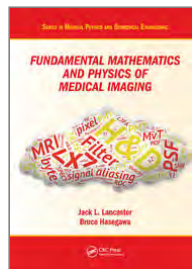
June 2015 : 612pp

Hb: 978-1-439-86783-9 : £94.99

eBook: 978-0-429-19447-4

* For full contents and more information, visit: www.routledge.com/9781439867839

Fundamental Mathematics and Physics of Medical Imaging



Jack Lancaster, Bruce Hasegawa

Series: Series in Medical Physics and Biomedical Engineering

Authored by a leading educator, this book is ideal for graduate medical imaging courses. Rather than focus on imaging modalities, the book delves into the mechanisms of image formation and image quality common to all imaging systems: contrast mechanisms, noise, and spatial and temporal resolution. This is an extensively revised new edition of The Physics of Medical X-Ray Imaging by Bruce Hasegawa (Medical Physics Publishing, 1991). A wide range of modalities are covered including X-ray CT, MRI and SPECT.

CRC Press

June 2020 : 346pp

Pb: 978-0-367-57452-9 : **£50.99**

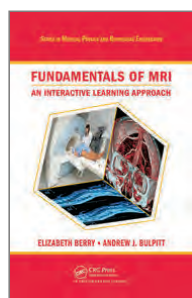
Hb: 978-1-498-75161-2 : **£94.99**

eBook: 978-1-315-36821-4

* For **full contents** and more information, visit: www.routledge.com/9780367574529

Fundamentals of MRI

An Interactive Learning Approach



Elizabeth Berry Elizabeth Berry Ltd, Leeds, UK, **Andrew J. Bulpitt** University of Leeds, School of Computing, Leeds, UK

Series: Series in Medical Physics and Biomedical Engineering

This interactive workbook provides a practical, self-contained introduction to the principles of MRI. Shaped by the authoritative experience of the authors, the book presents the fundamentals of MRI, while an accompanying CD offers animations and exercises that will help students develop a deeper understanding of the physical principles of MRI in practice. The text includes a number of exercises and worked examples with detailed solutions. It provides advanced students studying medical physics, radiologists, radiographers, and clinicians with a pragmatic approach to MRI that builds a solid foundation for further practice and study.

CRC Press

December 2008 : 316pp

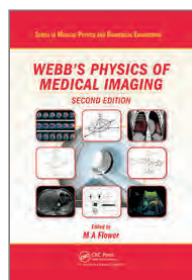
Hb: 978-1-584-88901-4 : **£94.99**

eBook: 978-0-429-14342-7

* For **full contents** and more information, visit: www.routledge.com/9781584889014

2ND EDITION

Webb's Physics of Medical Imaging



Edited by M Flower

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Since the publication of the best-selling first edition, the technology and clinical applications of medical imaging have changed significantly. Gathering these developments into one volume, this comprehensive second edition presents the basic physics, modern technology, and up-to-date examples of clinical application across all the modalities of medical imaging for undergraduate and graduate students studying medicine and medical physics. It now covers state-of-the-art detector technology and computer processing used in medical imaging. Along with many new examples and figures, this edition includes new chapters on medical image processing and multimodality imaging.

CRC Press

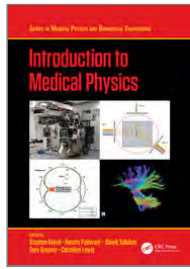
June 2012 : 864pp

Hb: 978-0-750-30573-0 : **£94.99**

eBook: 978-0-429-09957-1

* For **full contents** and more information, visit: www.routledge.com/9780750305730

Introduction to Medical Physics



Edited by **Stephen Keevil** Guy's and St Thomas' NHS Foundation Trust, London, UK, **Renato Padovani**, **Slavik Tabakov** King's College Hospital, London, UK, **Tony Greener** Guy's and St. Thomas' NHS Foundation Trust, London, UK, **Cornelius Lewis** King's College Hospital, London, UK

Series: *Series in Medical Physics and Biomedical Engineering*

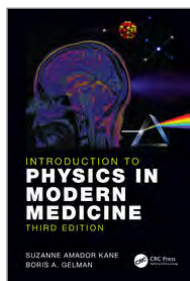
This textbook provides an accessible introduction to the basic principles of medical physics, the applications of medical physics equipment, and the role of a medical physicist in healthcare.

CRC Press
May 2024 : 500pp
Pb: 978-1-138-74283-3 : **£48.99**
Hb: 978-1-498-74479-9 : **£94.99**
eBook: 978-0-429-15575-8

* For full contents and more information, visit: www.routledge.com/9781138742833

3RD EDITION

Introduction to Physics in Modern Medicine



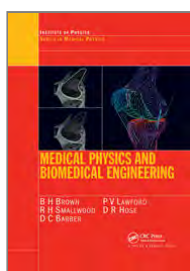
Suzanne Amador Kane Haverford College, Pennsylvania, USA, **Boris A. Gelman**

Covering a wide range of applications, this third edition builds on the bestselling second edition, providing medical personnel and students with an exploration of the physics-related applications found in state-of-the-art medical centers. Requiring no previous knowledge of physics, biology, or chemistry and keeping maths to a minimum, the application-dedicated chapters adhere to simple and self-contained qualitative explanations that make use of examples and illustrations. With an enhanced emphasis on digital imaging and computers in medicine, the text gives readers a fundamental understanding of the practical application of each concept and the basic science behind it.

CRC Press
March 2020 : 450pp
Pb: 978-1-138-03603-1 : **£65.99**
Hb: 978-1-138-74263-5 : **£190**
eBook: 978-1-315-23208-9

* For full contents and more information, visit: www.routledge.com/9781138036031

Medical Physics and Biomedical Engineering



B.H Brown, **R.H Smallwood** University of Sheffield, England, UK, **D.C. Barber** Royal Hallamshire Hospital, Sheffield, UK, **P.V Lawford**, **D.R Hose** University of Sheffield, Sheffield, UK

Series: *Series in Medical Physics and Biomedical Engineering*

Appropriate for senior undergraduates and graduates, this text presents the underlying physics, electronics, anatomy, and physiology as well as addresses practical applications. The structured approach of the text builds and broadens the material of opening chapters in the later chapters. The book covers biomechanics, image formation techniques, biomedical devices, physiological signals and responses, and respiratory and cardiovascular function and measurement. It includes chapter problems with short questions to test understanding of the main principles and longer questions to test more in-depth knowledge, along with detailed bibliographies that provide references to introductory texts and research materials.

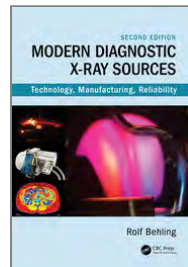
CRC Press
January 1998 : 762pp
Pb: 978-0-750-30368-2 : **£105**
eBook: 978-1-315-27560-4

* For full contents and more information, visit: www.routledge.com/9780750303682

2ND EDITION

Modern Diagnostic X-Ray Sources

Technology, Manufacturing, Reliability



Rolf Behling Philips Medical Systems DMC GmbH, Hamburg, Germany

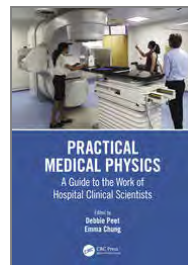
Now fully updated the second edition of Modern Diagnostic X-ray Sources: Technology, Manufacturing, Reliability gives an up-to-date summary of X-ray source design for applications in modern diagnostic medical imaging. It lays a sound groundwork for education and advanced training in the physics of X-ray production, X-ray interactions with matter, imaging modalities, and assesses their prospects. The book begins with a historical overview of X-ray tube and generator development, including key achievements leading up to the current technological and economic state of the field.

CRC Press
May 2023 : 412pp
Pb: 978-0-367-55845-1 : **£70.99**
Hb: 978-0-367-54692-2 : **£170**
eBook: 978-1-003-09540-8

* For full contents and more information, visit: www.routledge.com/9780367558451

Practical Medical Physics

A Guide to the Work of Hospital Clinical Scientists



Edited by **Debbie Peet** University Hospital of Leicester NHS Trust, **Emma Chung**

This is the first all-encompassing textbook designed to support trainee clinical scientists in medical physics as they start work in a hospital setting whilst undertaking an academic master's course.

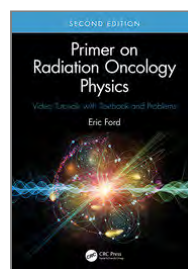
CRC Press
August 2021 : 262pp
Pb: 978-1-138-30753-7 : **£54.99**
Hb: 978-1-138-30982-1 : **£155**
eBook: 978-1-315-14242-5

* For full contents and more information, visit: www.routledge.com/9781138307537

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Video Tutorials with Textbook and Problems



Eric Ford Department of Radiation Oncology, University of Washington, Seattle, WA, USA

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CRC Press
May 2025 : 480pp
Pb: 978-1-032-38291-3 : **£86.99**
Hb: 978-1-032-38538-9 : **£220**
eBook: 978-1-003-34553-4

* For full contents and more information, visit: www.routledge.com/9781032382913

Problems and Solutions in Medical Physics

Nuclear Medicine Physics



Kwan Hoong Ng University of Malaya, Kuala Lumpur, Malaysia, **Chai Hong Yeong**, **Alan Christopher Perkins** University of Nottingham, UK

Series: Series in Medical Physics and Biomedical Engineering

The second in a three-volume set exploring Problems and Solutions in Medical Physics, this volume explores common questions and their solutions in Nuclear Medicine. This invaluable study guide should be used in conjunction with other key textbooks in the field to provide additional learning opportunities. Topics include radioactivity and nuclear transformation, radionuclide production and radiopharmaceuticals, instrumentation for gamma imaging, SPECT and PET/CT, radionuclide therapy, internal radiation dosimetry, and quality control and radiation protection in nuclear medicine. Each chapter provides examples, notes, and references for further reading to enhance understanding.

CRC Press

March 2019 : 163pp

Pb: 978-1-482-24000-9 : **£65.99**

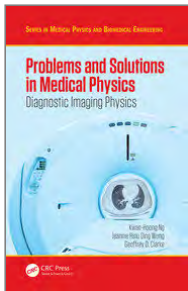
Hb: 978-0-367-14797-6 : **£155**

eBook: 978-1-482-24001-6

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Problems and Solutions in Medical Physics

Diagnostic Imaging Physics



Kwan Hoong Ng University of Malaya, Kuala Lumpur, Malaysia, **Jeannie Hsiu Ding Wong** University of Malaya, Kuala Lumpur, Malaysia, **Geoffrey Clarke**

Series: Series in Medical Physics and Biomedical Engineering

The first in a three-volume set exploring Problems and Solutions in Medical Physics, this volume explores common questions and their solutions in Diagnostic Imaging. This invaluable study guide should be used in conjunction with other key textbooks in the field to provide additional learning opportunities. It contains key imaging modalities, exploring X-ray, mammography, and fluoroscopy, in addition to computed tomography, magnetic resonance imaging, and ultrasonography. Each chapter provides examples, notes, and references for further reading to enhance understanding.

CRC Press

May 2018 : 156pp

Pb: 978-1-482-23995-9 : **£58.99**

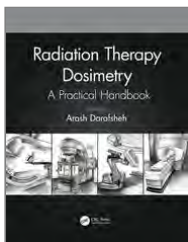
Hb: 978-1-138-54258-7 : **£160**

eBook: 978-1-351-00678-1

* For full contents and more information, visit: www.routledge.com/9781482239959

Radiation Therapy Dosimetry

A Practical Handbook



Edited by **Arash Darafsheh** Washington University School of Medicine, Department of Radiation Oncology

This comprehensive book covers the everyday use and underlying principles of radiation dosimeters used in radiation oncology clinics. It provides an up-to-date reference spanning the full range of current modalities with emphasis on practical know-how. The main audience is medical physicists, radiation oncology physics residents, and medical physics graduate students. The reader gains the necessary tools for determining which detector is best for a given application. Dosimetry of cutting edge techniques from radiosurgery to MRI-guided systems to small fields and proton therapy are all addressed.

CRC Press

May 2023 : 504pp

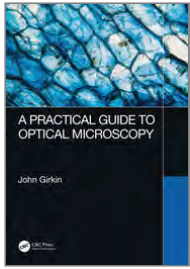
Pb: 978-0-367-68677-2 : **£86.99**

Hb: 978-1-138-54397-3 : **£230**

eBook: 978-1-351-00538-8

* For full contents and more information, visit: www.routledge.com/9780367686772

A Practical Guide to Optical Microscopy



John Girkin Durham University, UK

This book is aimed at providing users with a practical guide to help them select, and then use, the most suitable method for their application. It explores the principles behind the different forms of optical microscopy, without the use of complex maths, to provide an understanding to help the user utilise a specific method and then interpret the results. This book is an invaluable tool for use within research groups and laboratories in the life and physical sciences, acting as a first source for practical information to guide less experienced users (or those new to a particular methodology) on the range of techniques available.

CRC Press

July 2019 : 278pp

Pb: 978-1-138-06470-6 : **£87.99**

Hb: 978-1-138-06506-2 : **£220**

eBook: 978-1-315-11535-1

* For **full contents** and more information, visit: www.routledge.com/9781138064706

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A Handbook (Ten-Volume Set)



Edited by **Klaus D. Sattler** University of Hawaii, Honolulu, USA

Series: *21st Century Nanoscience*

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CRC Press

December 2020 : 4142pp

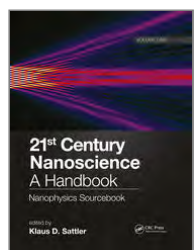
Hb: 978-0-815-36578-5 : **£1850**

eBook: 978-1-351-26056-5

* For full contents and more information, visit: www.routledge.com/9780815365785

21st Century Nanoscience – A Handbook

Nanophysics Sourcebook (Volume One)



Edited by **Klaus D. Sattler**

Series: *21st Century Nanoscience*

This up-to-date reference is the most comprehensive summary of the field of nanoscience and its applications. It begins with fundamental properties at the nanoscale and then goes well beyond into the practical aspects of the design, synthesis, and use of nanomaterials in various industries. It emphasizes the vast strides made in the field over the past decade – the chapters focus on new, promising directions as well as emerging theoretical and experimental methods.

CRC Press

June 2022 : 372pp

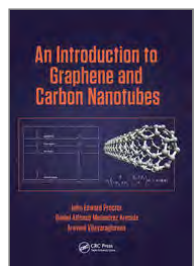
Pb: 978-1-032-33731-9 : **£50.99**

Hb: 978-0-815-38443-4 : **£140**

eBook: 978-0-367-33300-3

* For full contents and more information, visit: www.routledge.com/9781032337319

An Introduction to Graphene and Carbon Nanotubes



John E. Proctor , Daniel Melendrez Armada , Aravind Vijayaraghavan

Carbon nanotubes and graphene have been the subject of intense scientific research since their relatively recent discoveries. This book introduces the reader to the science behind these rapidly developing fields, and covers both the fundamentals and latest advances. Suitable for undergraduate students with a working knowledge of basic quantum mechanics, and for postgraduate researchers commencing their studies into the field, this book will equip the reader to critically evaluate the physical properties and potential for applications of graphene and carbon nanotubes.

CRC Press

June 2020 : 302pp

Pb: 978-0-367-57390-4 : **£50.99**

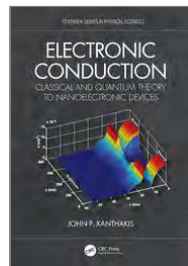
Hb: 978-1-498-75179-7 : **£94.99**

eBook: 978-1-315-36819-1

* For full contents and more information, visit: www.routledge.com/9780367573904

Electronic Conduction

Classical and Quantum Theory to Nanoelectronic Devices



John P. Xanthakis National Technical University of Athens, Greece

Series: *Textbook Series in Physical Sciences*

This book provides a concise, complete introduction to the fundamental principles of electronic conduction in microelectronic and nanoelectronic devices, with an emphasis on integrating the quantum aspects of conduction. The chapter coverage begins by presenting the classical theory of conduction, including introductory chapters on quantum mechanics and the solid state, then moving to a complete presentation of essential theory for understanding modern electronic devices. The author's unique approach is applicable to microscale and nanoscale device simulation, is particularly timely given the explosion in the nanoelectronics field.

CRC Press

May 2023 : 310pp

Pb: 978-0-367-63919-8 : **£50.99**

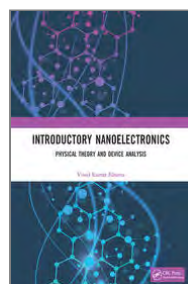
Hb: 978-1-138-58386-3 : **£140**

eBook: 978-0-429-50644-4

* For full contents and more information, visit: www.routledge.com/9780367639198

Introductory Nanoelectronics

Physical Theory and Device Analysis



Vinod Kumar Khanna CSIR-Central Electronics Engineering Research Institute, India

This introductory text develops the reader's fundamental understanding of core principles and experimental aspects underlying the operation of nanoelectronic devices. The author makes a thorough and systematic presentation of electron transport in quantum-confined systems such as quantum dots, quantum wires and quantum wells together with Landauer-Büttiker formalism and non-equilibrium Green's function approach. The writing throughout is straightforward and accessible, with clearly drawn illustrations and extensive self-study exercises for each chapter.

CRC Press

April 2022 : 446pp

Pb: 978-0-367-50403-8 : **£44.99**

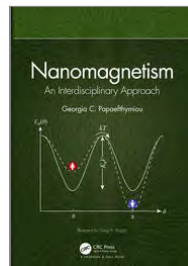
Hb: 978-0-815-38426-7 : **£140**

eBook: 978-1-351-20467-5

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Nanomagnetism

An Interdisciplinary Approach



Georgia C. Papaefthymiou Villanova University, Pennsylvania, USA

This book provides a core foundation for understanding magnetic quantum-size effects at the nanoscale and their many applications across the disciplines. This textbook will be a valuable guide for students in new interdisciplinary courses in nanomagnetism and magnetic nanomaterials, an area that has experienced immense growth in the last two decades due to advancements in sample preparation, nano patterning techniques and magnetic measurement instrumentation.

Chapman & Hall

October 2024 : 436pp

Pb: 978-1-032-14090-2 : **£47.99**

Hb: 978-1-439-81846-6 : **£99.99**

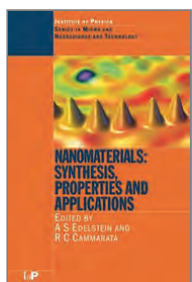
eBook: 978-1-315-15701-6

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2ND EDITION

Nanomaterials

Synthesis, Properties and Applications, Second Edition



Edited by **A.S. Edelstein** Naval Research Laboratory, Washington, DC, USA, **R.C. Cammarata** Johns Hopkins University, Baltimore, Maryland, USA

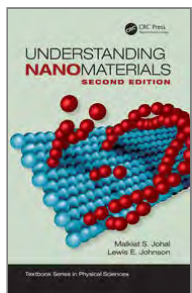
Nanomaterials: Synthesis, Properties and Applications provides a comprehensive introduction to nanomaterials, from how to make them to example properties, processing techniques, and applications. Contributions by leading international researchers and teachers in academic, government, and industrial institutions in nanomaterials provide an accessible guide for newcomers to the field. The coverage ranges from isolated clusters and small particles to nanostructured materials, multilayers, and nanoelectronics. The book contains a wealth of references for further reading. Individual chapters deal with relevant aspects of the underlying physics, materials science, and physical chemistry.

CRC Press
January 1998 : 618pp
Hb: 978-0-750-30578-5 : £190
eBook: 978-0-429-18126-9

* For full contents and more information, visit: www.routledge.com/9780750305785

2ND EDITION

Understanding Nanomaterials



Malkiat S. Johal Pomona College, CA, USA, **Lewis E. Johnson** University of Washington, WA, USA

Series: Textbook Series in Physical Sciences

The authors provide the perfect training tool for the workforce in nanotech development by presenting the fundamental principles that govern the fabrication, characterization, and application of nanomaterials. This edition represents a complete overhaul, giving a much more complete, self-contained introduction. As before, the text avoids excessive mathematical detail and is written in an easy to follow, appealing style suitable for anyone, regardless of background in physics, chemistry, engineering, or biology. The organization has been revised to include fundamental physical chemistry and physics pertaining to relevant electrical, mechanical, and optical material properties.

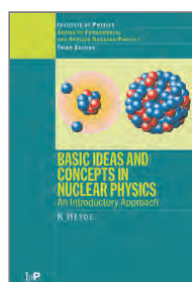
CRC Press
April 2018 : 528pp
Pb: 978-1-482-25322-1 : £94.99
Hb: 978-0-815-35438-3 : £170
eBook: 978-1-315-15693-4

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3RD EDITION

Basic Ideas and Concepts in Nuclear Physics

An Introductory Approach, Third Edition

**K. Heyde**

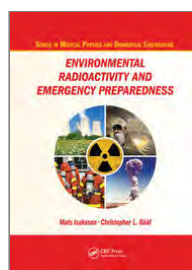
The third edition of a classic book, this text sets out in a clear and consistent manner the various elements of nuclear physics. Divided into four main parts: the constituents and characteristics of the nucleus; nuclear interactions, including the strong, weak and electromagnetic forces; an introduction to nuclear structure; and recent developments in nuclear structure research, the book delivers a balanced account of both theoretical and experimental nuclear physics. In addition to the numerous revisions and updates to the previous edition to capture the developments in the subject over the last five years, the book contains a new chapter on the structure and stability of very light nuclei.

CRC Press

July 2004 : 668pp

Pb: 978-0-750-30980-6 : **£94.99**Hb: 978-1-138-40638-4 : **£200**

eBook: 978-0-367-80657-6

* For full contents and more information, visit: www.routledge.com/9780750309806**Environmental Radioactivity and Emergency Preparedness****Mats Isaksson , Christopher L. Raaf***Series: Series in Medical Physics and Biomedical Engineering*

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CRC Press

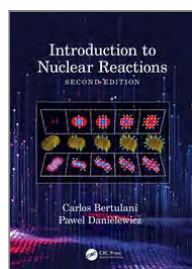
June 2020 : 656pp

Pb: 978-0-367-57402-4 : **£50.99**Hb: 978-1-482-24464-9 : **£120**

eBook: 978-1-315-37287-7

* For full contents and more information, visit: www.routledge.com/9780367574024

2ND EDITION

Introduction to Nuclear Reactions**Carlos Bertulani , Pawel Danielewicz**

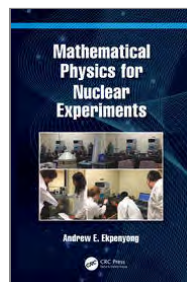
Until the publication of the first edition of Introduction to Nuclear Reactions in 2004, an introductory reference on nuclear reactions had been unavailable. Now, fully updated throughout, this second edition continues to provide an authoritative overview of nuclear reactions. It discusses the main formalisms, ranging from basic laws to the final formulae used in academic research to calculate measurable quantities.

CRC Press

September 2022 : 420pp

Pb: 978-0-367-34993-6 : **£50.99**Hb: 978-0-367-35362-9 : **£155**

eBook: 978-0-429-33106-0

* For full contents and more information, visit: www.routledge.com/9780367349936**Mathematical Physics for Nuclear Experiments****Andrew E. Ekpenyong**

Mathematical Physics for Nuclear Experiments presents an accessible introduction to the mathematical derivations of key equations used in describing and analysing results of typical nuclear physics experiments. Instead of merely showing results and citing texts, crucial equations in nuclear physics such as the Bohr's classical formula, Bethe's quantum mechanical formula for energy loss, Poisson, Gaussian and Maxwellian distributions for radioactive decay, and the Fermi function for beta spectrum analysis, among many more, are presented with the mathematical bases of their derivation and with their physical utility.

CRC Press

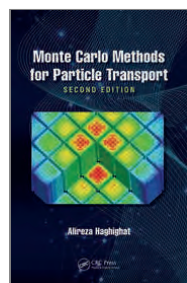
January 2022 : 278pp

Pb: 978-1-032-10499-7 : **£65.99**Hb: 978-0-367-76852-2 : **£170**

eBook: 978-1-003-21562-2

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Monte Carlo Methods for Particle Transport**Alireza Haghghat**

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CRC Press

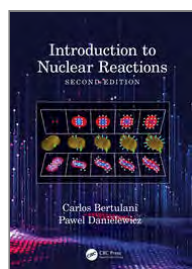
April 2022 : 310pp

Pb: 978-0-367-53809-5 : **£54.99**Hb: 978-0-367-18805-4 : **£140**

eBook: 978-0-429-19839-7

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2ND EDITION

Introduction to Nuclear Reactions**Carlos Bertulani , Pawel Danielewicz**

Until the publication of the first edition of Introduction to Nuclear Reactions in 2004, an introductory reference on nuclear reactions had been unavailable. Now, fully updated throughout, this second edition continues to provide an authoritative overview of nuclear reactions. It discusses the main formalisms, ranging from basic laws to the final formulae used in academic research to calculate measurable quantities.

CRC Press

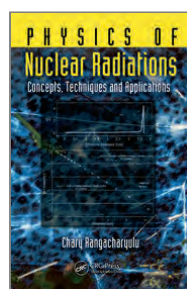
September 2022 : 420pp

Pb: 978-0-367-34993-6 : **£50.99**Hb: 978-0-367-35362-9 : **£155**

eBook: 978-0-429-33106-0

* For full contents and more information, visit: www.routledge.com/9780367349936**Physics of Nuclear Radiations**

Concepts, Techniques and Applications

**Chary Rangacharyulu** University of Saskatchewan, Saskatoon, Canada and Nelson Mandela African Institute of Science and Technology (NM-AIST), Arusha, Tanzania

This text makes the physics of nuclear radiations accessible to students with a basic background in physics and mathematics. Rather than convince students one way or the other about the hazards of nuclear radiations, the text empowers them with tools to calculate and assess nuclear radiations and their impact. It discusses the meaning behind mathematical formulae as well as the areas in which the equations can be applied. Coverage includes archeology, health, and medical physics applications.

CRC Press

December 2013 : 383pp

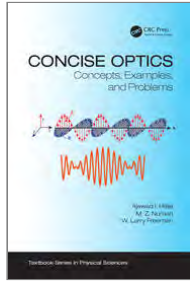
Hb: 978-1-439-85777-9 : **£125**

eBook: 978-0-429-06868-3

* For full contents and more information, visit: www.routledge.com/9781439857779

Concise Optics

Concepts, Examples, and Problems



Ajawad I. Haija Indiana University of Pennsylvania, USA, **M. Z. Numan** Indiana University of Pennsylvania, USA, **W. Larry Freeman** Indiana University of Pennsylvania, Professor Emeritus, USA

Series: Textbook Series in Physical Sciences

This introductory text is a reader friendly treatment of geometrical and physical optics emphasizing problems and solved examples with detailed analysis and helpful commentary. The authors are seasoned educators with decades of experience teaching optics. Their approach is to gradually present mathematics explaining the physical concepts. It covers ray tracing to the wave nature of light, and introduces Maxwell's equations in an organic fashion. The text then moves on to explain how to analyze simple optical systems such as spectacles for improving vision, microscopes, and telescopes, while also being exposed to contemporary research topics.

CRC Press

March 2018 : 486pp

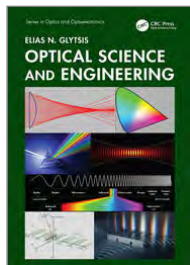
Pb: 978-1-138-10702-1 : **£99.99**

Hb: 978-1-138-10712-0 : **£265**

eBook: 978-1-315-10124-8

* For full contents and more information, visit: www.routledge.com/9781138107021

Optical Science and Engineering



Elias Glytsis

Series: Series in Optics and Optoelectronics

Optical Science and Engineering explores the fundamental principles and advanced topics within the field of optical science and engineering. This textbook is an essential resource for undergraduate and graduate students studying optics, as well as engineers and researchers seeking a deeper understanding of optical science and engineering. With its blend of theoretical insights and computational examples, it serves as both a foundational learning tool and a practical reference for those working in academia and industry.

CRC Press

December 2025 : 942pp

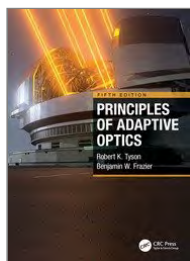
Hb: 978-1-032-79062-6 : **£105**

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5TH EDITION

Principles of Adaptive Optics



Robert K. Tyson University of North Carolina at Charlotte, USA, **Benjamin West Frazier**

Principles of Adaptive Optics describes the foundations, principles, and applications of adaptive optics (AO) and its enabling technologies. This leading textbook addresses the fundamentals of AO at the core of astronomy, high-energy lasers, biomedical imaging, and optical communications.

CRC Press

September 2025 : 356pp

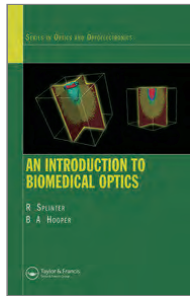
Pb: 978-0-367-69048-9 : **£52.99**

Hb: 978-0-367-67603-2 : **£105**

eBook: 978-1-003-14019-1

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An Introduction to Biomedical Optics



Robert Splinter University of North Carolina at Charlotte, USA, **Brett A. Hooper** Areté Associates, Arlington, Virginia, USA

Series: Series in Optics and Optoelectronics

This is the first comprehensive, introductory book describing both diagnostic and therapeutic optical methods in medicine. The first section covers the history of optics theory and the basic science behind light-tissue interactions. It also introduces the relevant approaches and approximations used to describe light propagation in turbid biological media. In the second section, the authors look more closely at light-tissue interactions and their applications in different medical areas, such as wound healing and tissue welding. The final section examines the various diagnostic methods that are employed using optical techniques. Throughout, the text employs numerical examples of clinical and research requirements.

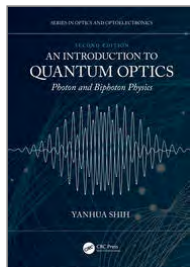
CRC Press
December 2006 : 624pp
Hb: 978-0-750-30938-7 : **£120**
eBook: 978-0-429-14814-9

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2ND EDITION

An Introduction to Quantum Optics

Photon and Biphoton Physics



Yanhua Shih University of Maryland

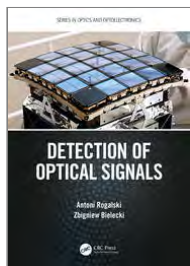
Series: Series in Optics and Optoelectronics

This text offers a complete revision for its introduction to the quantum theory of light, including notable developments as well as improvements in presentation of basic theory and concepts, with continued emphasis on experimental aspects. The author provides a thorough overview on basic methods of classical and quantum mechanical measurements in quantum optics, enabling readers to analyze, summarize, and resolve quantum optical problems. The broad coverage of concepts and tools and its practical, experimental emphasis set it apart from other available resources. New discussions of timely topics such as the concept of the photon and distinguishability bring the entire contents up to date.

CRC Press
May 2023 : 448pp
Pb: 978-0-367-67359-8 : **£49.99**
Hb: 978-1-138-60125-3 : **£140**
eBook: 978-1-003-13060-4

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Detection of Optical Signals



Antoni Rogalski , Zbigniew Bielecki

Series: Series in Optics and Optoelectronics

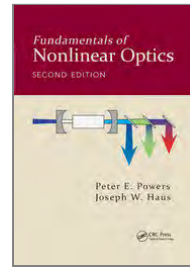
Detection of Optical Signals provides a comprehensive overview of important technologies for photon detection, from the X-ray through ultraviolet, visible, infrared to far-infrared spectral regions. It uniquely combines perspectives from many disciplines, particularly within physics and electronics, which are necessary to have a complete understanding of optical receivers. This will be an invaluable resource for graduate students in physics and engineering, as well as a helpful refresher for those already working with aerospace sensors and systems, remote sensing, thermal imaging, military imaging, optical telecommunications, infrared spectroscopy, and light detection.

CRC Press
October 2024 : 594pp
Pb: 978-1-032-06922-7 : **£48.99**
Hb: 978-1-032-05948-8 : **£155**
eBook: 978-1-003-26309-8

* For full contents and more information, visit: www.routledge.com/9781032069227

2ND EDITION

Fundamentals of Nonlinear Optics



Peter E. Powers , Joseph W. Haus

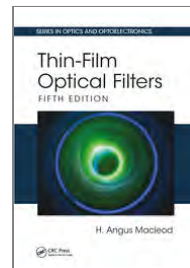
This fully revised edition of the groundbreaking text by the late Peter Powers offers enhanced coverage while remaining the most 'essentials only,' practical introductory treatment available. It includes a brand new chapter on quantum nonlinear optics, other added sections and improvements, as well as many new problems and examples. This up-to-date treatment reflects the latest device applications and importance of nonlinear optics in development of materials, optical switching and processing, and nonlinear guided wave optics.

CRC Press
December 2019 : 500pp
Pb: 978-0-367-87411-7 : **£58.99**
Hb: 978-1-498-73683-1 : **£125**
eBook: 978-1-315-11643-3

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5TH EDITION

Thin-Film Optical Filters



H. Angus Macleod

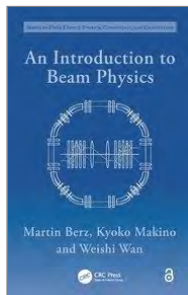
Series: Series in Optics and Optoelectronics

This book is quite simply the Bible for the field of optical thin films. It gives the most complete introduction to thin film optical coatings addressed to manufacturers and users alike. This fifth edition continues in this role, offering a complete update on current design, manufacture, performance, and applications. Among new topics are absorbers and coherent perfect absorbers, photonic crystals, and metamaterials for optical coating. In addition, the author has added substantial new information on scattering, composite materials, wire grid polarizers, laser damage, and a complete update of applications.

CRC Press
March 2021 : 696pp
Pb: 978-0-367-78160-6 : **£50.99**
Hb: 978-1-138-19824-1 : **£185**
eBook: 978-1-315-27049-4

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An Introduction to Beam Physics



Martin Berz Michigan State University, East Lansing, USA,
Kyoko Makino Michigan State University, East Lansing,
USA, **Weishi Wan**

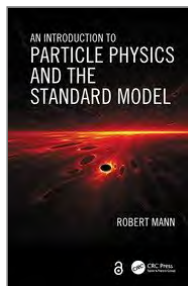
Series: Series in Particle Physics, Cosmology and Gravitation

Accessible to beginning graduate and upper-division undergraduate students in physics, mathematics, and engineering, this book is based on lectures given at Michigan State University, the online VUBeam program, the U.S. Particle Accelerator School, the CERN Academic Training Programme, and other venues. It begins with essential techniques of production, acceleration, and storage of beams, whenever possible from the historical perspective. It covers transfer maps of single- and multi-pass systems and their properties as well as some advanced topics, including aberration integrals and analysis of resonances.

CRC Press
October 2016 : 314pp
Pb: 978-1-138-19890-6 : **£54.99**
Hb: 978-0-750-30263-0 : **£160**
eBook: 978-0-429-14813-2

* For full contents and more information, visit: www.routledge.com/9781138198906

An Introduction to Particle Physics and the Standard Model



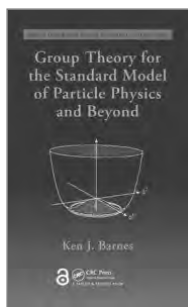
Robert Mann University of Waterloo, Ontario, Canada

Emphasizing the connections between particle physics and the rest of the physics field, this book provides an organizational framework for understanding modern particle physics. The author presents a standard model of strong, weak, and electromagnetic interactions. Undergraduate students will develop a working knowledge of some of the calculation methods and mathematical tools used in particle physics. Reviewing key experimental and theoretical achievements in the field, the text covers such topics as conservation laws, quantum electrodynamics, and wave equations. The final chapter offers a perspective on the future of particle physics.

CRC Press
November 2009 : 614pp
Hb: 978-1-420-08298-2 : **£94.99**
eBook: 978-0-429-14122-5

* For full contents and more information, visit: www.routledge.com/9781420082982

Group Theory for the Standard Model of Particle Physics and Beyond



Ken J. Barnes University of Southampton, UK

Series: Series in Particle Physics, Cosmology and Gravitation

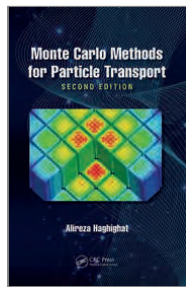
Based on the author's well-established courses, this text explores the use of symmetries through descriptions of the techniques of Lie groups and Lie algebras. It develops the models, theoretical framework, and mathematical tools to understand these symmetries. The author presents the modern framework of special relativity and describes Lie group techniques for the standard model and beyond. He also provides a stepping-stone to Einstein's work on general relativity and goes beyond the standard model to explore supertransformations, superspace methods, and more. The text includes many worked examples and problems, along with a solutions manual for qualifying instructors.

CRC Press
March 2010 : 256pp
Hb: 978-1-420-07874-9 : **£94.99**
eBook: 978-0-429-18455-0

* For full contents and more information, visit: www.routledge.com/9781420078749

2ND EDITION

Monte Carlo Methods for Particle Transport



Alireza Haghghat

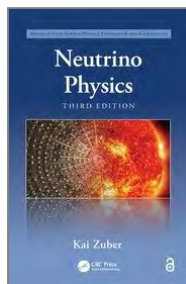
Fully updated with the latest developments in the eigenvalue Monte Carlo calculations and automatic variance reduction techniques and containing an entirely new chapter on fission matrix and alternative hybrid techniques. This second edition explores the uses of the Monte Carlo method for real-world applications, explaining its concepts and limitations.

CRC Press
April 2022 : 310pp
Pb: 978-0-367-53809-5 : **£54.99**
Hb: 978-0-367-18805-4 : **£140**
eBook: 978-0-429-19839-7

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3RD EDITION

Neutrino Physics



Kai Zuber Dresden University, Germany

Series: Series in Particle Physics, Cosmology and Gravitation

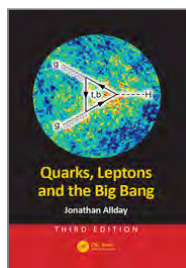
This book provides a comprehensive self-contained examination of neutrinos, covering their research history and theory, as well as their application to particle physics, astrophysics, nuclear physics, and the broad reach of cosmology. Revised as needed to be equal to the research of today, Neutrino Physics, Third Edition delves into neutrino cross sections, mass measurements, double beta decay, solar neutrinos, neutrinos from supernovae, and high energy neutrinos, as well as new experimental results in the context of theoretical models.

CRC Press
December 2021 : 465pp
Pb: 978-1-032-24220-0 : **£44.99**
Hb: 978-1-138-71889-0 : **£125**
eBook: 978-1-315-19561-2

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3RD EDITION

Quarks, Leptons and the Big Bang



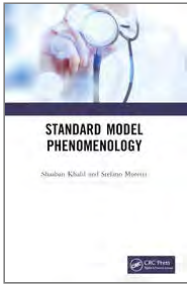
Jonathan Allday

Quarks, Leptons and The Big Bang, Third Edition, is a clear, readable and self-contained introduction to particle physics and related areas of cosmology. It bridges the gap between non-technical popular accounts and textbooks for advanced students. The book concentrates on presenting the subject from the modern perspective of quarks, leptons and the forces between them. This book will appeal to students, teachers and general science readers interested in fundamental ideas of modern physics. This edition brings the book completely up to date by including advances in particle physics and cosmology, such as the discovery of the Higgs boson, the LIGO gravitational wave discovery and the WMAP and PLANCK results.

CRC Press
November 2016 : 393pp
Pb: 978-1-498-77311-9 : **£50.99**
Hb: 978-1-138-42717-4 : **£200**
eBook: 978-1-315-38136-7

* For full contents and more information, visit: www.routledge.com/9781498773119

Standard Model Phenomenology



Shaaban Khalil , Stefano Moretti University of Southampton, Highfield Campus, United Kingdom

This new book is fully up to date with all the latest developments on both theoretical and experimental investigations of the Standard Model (SM) of particle physics with a particular emphasis on its historical development on both sides.

CRC Press

August 2024 : 246pp

Pb: 978-1-032-20168-9 : **£48.99**

Hb: 978-1-138-33643-8 : **£190**

eBook: 978-0-429-44301-5

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The Science and Technology of Particle Accelerators



Rob Appleby , Graeme Burt , James Clarke , Hywel Owen

This book provides integrated coverage of accelerator science and technology, this book presents the fundamental concepts alongside detailed engineering discussions and extensive practical guidance, including many numerical examples. For each topic, the authors provide a description of the physical principles, a guide to the practical application of those principles, and a discussion of how to design the components that allow the application to be realised.

CRC Press

August 2022 : 318pp

Pb: 978-1-032-39984-3 : **£50.99**

Hb: 978-1-138-49987-4 : **£140**

eBook: 978-1-351-00796-2

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2ND EDITION

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Paul Langacker

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This new edition of The Standard Model and Beyond presents an advanced introduction to the physics and formalism of the standard model and other non-abelian gauge theories. It provides a solid background for understanding supersymmetry, string theory, extra dimensions, dynamical symmetry breaking, and cosmology. In addition to updating all of the experimental and phenomenological results from the first edition, it contains a new chapter on collider physics; expanded discussions of Higgs, neutrino, and dark matter physics; and many new problems.

CRC Press

June 2020 : 650pp

Pb: 978-0-367-57344-7 : **£50.99**

Hb: 978-1-498-76321-9 : **£94.99**

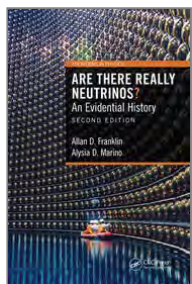
eBook: 978-1-315-17062-6

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2ND EDITION

Are There Really Neutrinos?

An Evidential History



Allan D. Franklin Department of Physics, University of Colorado Boulder, **Alysia D. Marino** Department of Physics, University of Colorado Boulder

Series: *Frontiers in Physics*

This intriguing and accessible book examines the experiments on neutrino oscillations. It argues that this history gives us good reason to believe in the existence of neutrinos, a particle that interacts so weakly with matter that its interaction length is measured in light years of lead. Yet, the scientific process has provided evidence of the elusive neutrino. Written in a style accessible to any reader with a college education in physics, *Are There Really Neutrinos?* is of interest to students and researchers alike. This second edition contains a new epilogue highlighting the new developments in neutrino physics over the past 20 years.

CRC Press

September 2021 : 416pp

Pb: 978-0-367-19005-7 : £48.99

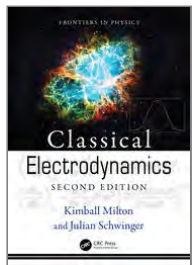
Hb: 978-0-367-19002-6 : £200

eBook: 978-0-429-19978-3

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2ND EDITION

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Edited by **Kimball Milton**, **Julian Schwinger**

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Classical Electrodynamics captures Schwinger's inimitable lecturing style, in which everything flows inexorably from what has gone before. This anniversary edition offers a refreshing update while still maintaining Schwinger's voice. The book provides the student with a thorough grounding in electrodynamics in particular, and in classical field theory in general.

CRC Press

August 2025 : 570pp

Pb: 978-0-367-52298-8 : £52.99

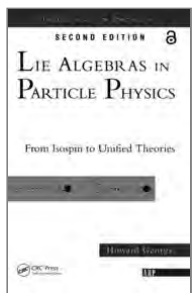
Hb: 978-0-367-50207-2 : £105

eBook: 978-1-003-05736-9

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Lie Algebras In Particle Physics

from Isospin To Unified Theories



Howard Georgi

Series: *Frontiers in Physics*

Howard Georgi is the co-inventor (with Sheldon Glashow) of the SU(5) theory. This extensively revised and updated edition of his classic text makes the theory of Lie groups accessible to graduate students, while offering a perspective on the way in which knowledge of such groups can provide an insight into the development of unified theories of strong, weak, and electromagnetic interactions.

CRC Press

October 1999 : 340pp

Pb: 978-0-738-20233-4 : £83.99

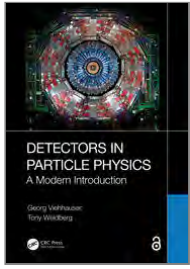
Hb: 978-0-367-09172-9 : £155

eBook: 978-0-429-49921-0

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Detectors in Particle Physics

A Modern Introduction



Georg Viehhauser , Tony Weidberg

This textbook provides an accessible yet comprehensive introduction to detectors in particle physics. It emphasises the core physics principles, enabling a deeper understanding of the subject for further and more advanced studies. In addition to the discussion of the underlying detector physics, another aspiration of this book is to introduce the reader to practically important aspects of particle detectors, like electronics, alignment, calibration and simulation of particle detectors. Case studies of the various applications of detectors in particle physics are provided.

CRC Press

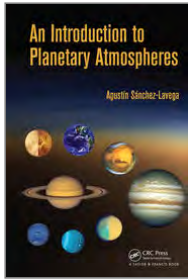
March 2024 : 348pp

Hb: 978-1-032-24658-1 : **£86.99**

eBook: 978-1-003-28767-4

* For full contents and more information, visit: www.routledge.com/9781032246581

An Introduction to Planetary Atmospheres



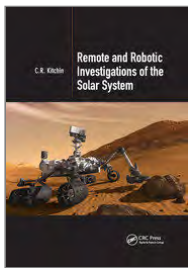
Agustin Sanchez-Lavega

Providing a much-needed resource for this cross-disciplinary field, this text presents current knowledge on atmospheres and the fundamental mechanisms operating on them. It offers a unified scheme of the chemical and physical processes occurring in atmospheres and extends the theoretical foundations of an atmospheric topic to all planets and satellites with an atmosphere. The text provides an up-to-date comparative vision of the phenomena in atmospheres that encompasses the latest planetary space mission discoveries. It also reviews the observational methods and current facilities used to explore planetary atmospheres on Earth and in space.

CRC Press
October 2024 : 630pp
Pb: 978-1-032-91808-2 : **£48.99**
Hb: 978-1-420-06732-3 : **£78.99**
eBook: 978-0-429-18458-1

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Remote and Robotic Investigations of the Solar System



C.R. Kitchin

Remote and Robotic Investigations of the Solar System covers all aspects of solar system observations: the instruments, their theory, and their practical use both on Earth and in space. It explores the state-of-the-art telescopes, cameras, spacecraft and instruments used to analyse the interiors, surfaces, atmospheres and radiation belts of solar system objects, in addition to radio waves, gamma rays, cosmic rays and neutrinos. This book would be ideal for university students undertaking physical science subjects and professionals working in the field, in addition to amateur astronomers and anyone interested in learning more about our local astronomical neighbour.

CRC Press
December 2019 : 376pp
Pb: 978-0-367-87166-6 : **£50.99**
Hb: 978-1-498-70493-9 : **£155**
eBook: 978-1-351-25547-9

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Solar System

Between Fire and Ice



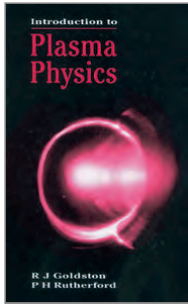
Thomas Hockey , Jennifer Lynn Bartlett , Daniel C. Boice

Combining the latest astronomical results with a historical perspective, Solar System: Between Fire and Ice takes you on a fabulous tour of our intriguing Solar System.

CRC Press
August 2021 : 352pp
Pb: 978-0-367-76869-0 : **£39.99**
Hb: 978-1-032-05437-7 : **£105**
eBook: 978-1-003-19755-3

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Introduction to Plasma Physics



R.J. Goldston Princeton Plasma Physics Laboratory, Princeton University, U, **P.H. Rutherford**

Focusing on the fundamentals of modern plasma physics, this text is ideal for an introductory lecture course on plasma physics. Sections on single-particle motion, plasmas as fluids, and collisional processes in plasmas lay the groundwork for a thorough understanding of the subject. The authors place the material in its historical context for a rich understanding of the ideas presented. They also emphasize the importance of medical imaging in radiotherapy, providing a logical link to more advanced works in the area. The text includes problems, tables, illustrations, a thorough index, and a complete list of references.

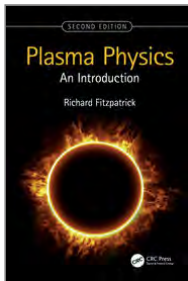
CRC Press
November 1995 : 510pp
Pb: 978-0-750-30183-1 : **£94.99**
Hb: 978-1-138-45831-4 : **£200**
eBook: 978-0-367-80695-8

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2ND EDITION

Plasma Physics

An Introduction



Richard Fitzpatrick The University of Texas, Austin, USA

Plasma Physics: An Introduction is based on a series of university course lectures by a leading name in the field, and thoroughly covers the physics of the fourth state of matter. This textbook provides a concise and cohesive introduction to plasma physics theory and offers a solid foundation for students of physics wishing to take higher level courses in plasma physics. This second edition has been fully updated to include new content on collisions and magnetic reconnection.

CRC Press
December 2022 : 306pp
Pb: 978-1-032-20251-8 : **£54.99**
Hb: 978-1-032-21407-8 : **£140**
eBook: 978-1-003-26825-3

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Plasma Physics via Computer Simulation



C.K. Birdsall University of California, Berkeley, USA, **A. Bruce Langdon**, **A.B. Langdon** Lawrence Livermore National Laboratory, California, USA

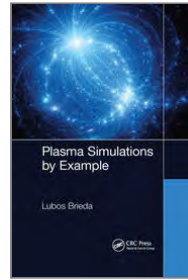
Series: *Series in Plasma Physics*

Divided into three main parts, Plasma Physics via Computer Simulation guides the reader to an understanding of the basic concepts in this fascinating field of research. Part 1 introduces you to the fundamental concepts of simulation. It examines one-dimensional electrostatic codes and electromagnetic codes, and describes the numerical methods and analysis. Part 2 explores the mathematics and physics behind the algorithms used in Part 1. In Part 3, it addresses some of the more complicated simulations in two and three dimensions. Using software available from the author's website, readers are encouraged to perform practical work.

CRC Press
October 2004 : 504pp
Pb: 978-0-750-31025-3 : **£120**
eBook: 978-1-315-27504-8

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Plasma Simulations by Example



Lubos Brieda

The study of plasmas is crucial in improving our understanding of the universe, and they are being increasingly utilised in key technologies such as spacecraft thrusters, plasma medicine, and fusion energy. Providing the reader with an easy to follow set of examples that clearly illustrate how simulation codes are written, this new book guides readers how to develop C++ computer codes for simulating plasmas primarily with the kinetic Particle in Cell (PIC) method. This text would be invaluable to advanced undergraduates and graduate students looking to learn how to put the theory to the test.

CRC Press
September 2021 : 368pp
Pb: 978-1-032-17614-7 : **£50.99**
Hb: 978-1-138-34232-3 : **£190**
eBook: 978-0-429-43978-0

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Problems and Solutions in Medical Physics - Three Volume Set



Kwan Hoong Ng University of Malaya, Kuala Lumpur, Malaysia, **Robin Hill**, **Alan Christopher Perkins** University of Nottingham, UK, **Jeannie Hsiu Ding Wong** University of Malaya, Kuala Lumpur, Malaysia, **Geoffrey Clarke**, **Chai Hong Yeong**, **Ngie Min Ung** University of Malaya, Kuala Lumpur, Malaysia

Series: *Series in Medical Physics and Biomedical Engineering*

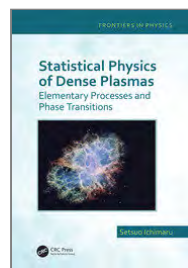
While graduate programs in medical physics are increasing across the globe, there is no graduate-level book currently dedicated to solving problems in medical physics. Filling this need, this three-volume set covers diagnostic imaging physics, nuclear medicine physics, and radiotherapy physics. It is suitable for graduate courses in medical physics, radiological sciences, and biomedical engineering. The set helps students understand how to apply theoretical concepts in real-world medical physics situations.

CRC Press
November 2022 : 600pp
Pb: 978-1-032-33576-6 : **£175.97**
Hb: 978-1-482-23985-0 : **£350**

* For full contents and more information, visit: www.routledge.com/9781032335766

Statistical Physics of Dense Plasmas

Elementary Processes and Phase Transitions



Setsuo Ichimaru Tokyo University Department of Physics

Series: *Frontiers in Physics*

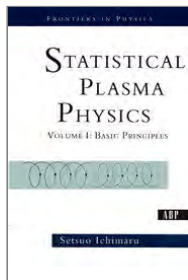
This timely book gives a complete overview on the statistical mechanics and electrodynamics elucidating the physical processes in dense plasma systems. The author emphasizes laboratory-based experiments on metallic hydrogen, and gives detailed account of the plasma phenomena in various astrophysical settings. The coverage encompasses the intersection with condensed matter physics, atomic physics, nuclear physics, and astrophysics, including such key topics as phase transitions, transport, optical and nuclear processes. This essential resource discusses important topics such as metallic hydrogen, stellar and planetary magnetisms, pycnonuclear reactions, and gravitational waves.

Chapman & Hall
December 2018 : 204pp
Pb: 978-1-138-36466-0 : **£78.99**
Hb: 978-1-138-36468-4 : **£190**
eBook: 978-0-429-43121-0

* For full contents and more information, visit: www.routledge.com/9781138364660

Statistical Plasma Physics, Volume I

Basic Principles



Setsuo Ichimaru

Series: Frontiers in Physics

Plasma physics is an integral part of statistical physics, complete with its own basic theories. Designed as a two-volume set, Statistical Plasma Physics is intended for advanced undergraduate and beginning graduate courses on plasma and statistical physics, and as such, its presentation is self-contained and should be read without difficulty by those with backgrounds in classical mechanics, electricity and magnetism, quantum mechanics, and statistics. Major topics include: plasma phenomena in nature, kinetic equations, plasmas and dielectric media, electromagnetic properties of Vlasov plasmas in thermodynamic equilibria, transient processes, and instabilities.

CRC Press

February 2004 : 406pp

Pb: 978-0-813-34178-1 : **£75.99**

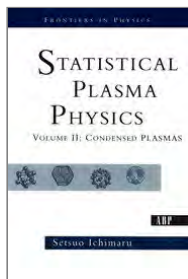
Hb: 978-0-367-09201-6 : **£155**

eBook: 978-0-429-49715-5

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Statistical Plasma Physics, Volume II

Condensed Plasmas



Setsuo Ichimaru

Series: Frontiers in Physics

The aim of this book is to elucidate a number of basic topics in physics of dense plasmas that interface with condensed matter physics, atomic physics, nuclear physics, and astrophysics. The different plasmas examined here include astrophysical dense plasmas - like those found in the interiors, surfaces, and outer envelopes of such astronomical objects as neutron stars, white dwarfs, the Sun, brown dwarfs, and giant planets. Condensed plasmas in laboratory settings cover metals and alloys (solid, amorphous, liquid, and compressed), semiconductors (electrons, holes, and their droplets), and various realizations of dense plasmas (shock-compressed, diamond-anvil cell, metal vaporization, pinch discharges, and more.)

CRC Press

February 2004 : 304pp

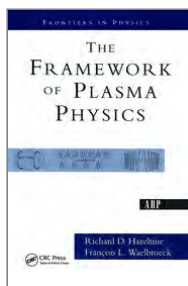
Pb: 978-0-813-34179-8 : **£75.99**

Hb: 978-0-367-09202-3 : **£155**

eBook: 978-0-429-49714-8

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The Framework Of Plasma Physics



Richard D. Hazeltine, Francois L. Waelbroeck

Series: Frontiers in Physics

Plasma physics is a necessary part of our understanding of stellar and galactic structure. It determines the magnetospheric environment of the earth and other planets; it forms the research frontier in such areas as nuclear fusion, advanced accelerators, and high power lasers; and its applications to various industrial processes (such as computer chip manufacture) are rapidly increasing. It is thus a subject with a long list of scientific and technological applications. This book provides the scientific background for understanding such applications, but it emphasizes something else: the intrinsic scientific interest of the plasma state.

CRC Press

January 2004 : 344pp

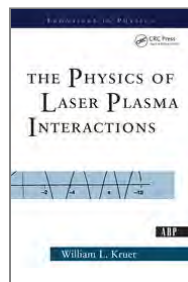
Pb: 978-0-813-34213-9 : **£75.99**

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eBook: 978-0-429-50280-4

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The Physics Of Laser Plasma Interactions



William Kruer

Series: Frontiers in Physics

This book focuses on the physics of laser plasma interactions and presents a complementary and very useful numerical model of plasmas. It describes the linear theory of light wave propagation in plasmas, including linear mode conversion into plasma waves and collisional damping.

CRC Press

January 2003 : 196pp

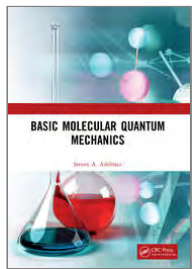
Pb: 978-0-813-34083-8 : **£65.99**

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Basic Molecular Quantum Mechanics



Steven A. Adelman Purdue University, Department of Chemistry, West Lafayette, Indiana, USA

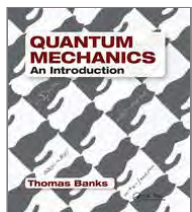
This book introduces quantum mechanics by covering the fundamentals of quantum mechanics and some of its most important chemical applications: vibrational and rotational spectroscopy and electronic structure of atoms and molecules. Thoughtfully organized, the author builds up quantum mechanics systematically with each chapter preparing the student for the more advanced chapters and complex applications.

CRC Press
 August 2021 : 464pp
 Pb: 978-1-498-73399-1 : **£83.99**
 Hb: 978-1-032-01065-6 : **£200**
 eBook: 978-0-429-15574-1

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Quantum Mechanics

An Introduction



Thomas Banks

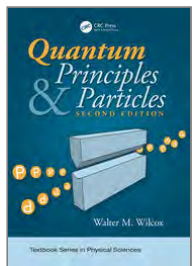
This new introductory textbook gives a complete, modern perspective on quantum mechanics as the basis of so much of physical sciences and today's electronic technologies. It clarifies for the first time many common misconceptions regarding wave/particle duality and the correct interpretation of measurements. The author, a recognized authority in the field and dedicated educator, presents information at an elementary level, avoiding the detailed, complex derivations in favor of simple, clear explanations.

CRC Press
 March 2021 : 568pp
 Pb: 978-0-367-78062-3 : **£50.99**
 Hb: 978-1-482-25506-5 : **£125**
 eBook: 978-0-429-43842-4

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Walter Wilcox Baylor University, Waco, Texas, USA

Series: *Textbook Series in Physical Sciences*

This textbook offers a unique introduction to quantum mechanics progressing gradually from elementary quantum mechanics to aspects of particle physics. It presents the microscopic world by analysis of the simplest possible quantum mechanical system (spin 1/2). A special feature is the author's use of visual aids known as process diagrams, which show how amplitudes for quantum mechanical processes are computed. The second edition include a new chapter on time-dependent processes, in addition to many new problems and improved illustrations.

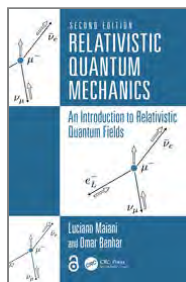
CRC Press
 August 2019 : 600pp
 Pb: 978-1-138-09037-8 : **£120**
 Hb: 978-1-138-09041-5 : **£170**
 eBook: 978-1-138-09043-9

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2ND EDITION

Relativistic Quantum Mechanics

An Introduction to Relativistic Quantum Fields



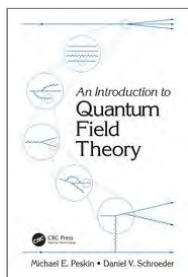
Luciano Maiani University of Rome, La Sapienza, Italy,
Omar Benhar INFN, Roma, Italy

Written by two of the most prominent leaders in particle physics, *Relativistic Quantum Mechanics: An Introduction to Relativistic Quantum Fields* provides a classroom-tested introduction to the formal and conceptual foundations of quantum field theory. Designed for advanced undergraduate- and graduate-level physics students, the text only requires previous courses in classical mechanics, relativity, and quantum mechanics.

CRC Press
 October 2024 : 384pp
 Hb: 978-1-032-56594-1 : **£80.99**
 eBook: 978-1-003-43626-3

* For full contents and more information, visit: www.routledge.com/9781032565941

An Introduction To Quantum Field Theory



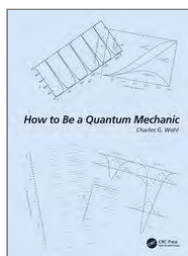
Michael E. Peskin, Daniel V. Schroeder

This is a textbook intended for the graduate physics course covering relativistic quantum mechanics, quantum electrodynamics, and Feynman diagrams. The authors make these subjects accessible through carefully worked examples illustrating the technical aspects of the subject, and intuitive explanations of what is going on behind the mathematics. After presenting the basics of quantum electrodynamics, the authors discuss the theory of renormalization and its relation to statistical mechanics, and introduce the renormalization group. This discussion sets the stage for a discussion of the physical principles that underlie the fundamental interactions of elementary particle physics and their d

CRC Press
September 2019 : 868pp
Pb: 978-0-367-32056-0 : **£71.99**
Hb: 978-0-201-50397-5 : **£140**
eBook: 978-0-429-50355-9

* For full contents and more information, visit: www.routledge.com/9780367320560

How to Be a Quantum Mechanic



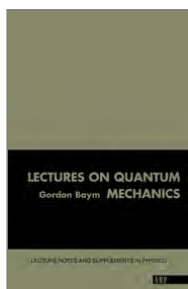
Charles G. Wohl University of California, Berkeley

These lecture notes comprise an advanced undergraduate course in quantum mechanics as taught by Charles Wohl for over 30 years at the University of California, Berkeley. Each chapter covers a major subject in quantum mechanics, beginning with an accessible introduction and unfolding in subsections to signpost the reader's progression through the topic. And, because examples are the best way to get into a subject, every chapter ends with a series of problems—over 175 total in the book—to provide hands-on practice in calculating. Targeted to upper-division physics students and lecturers, this textbook and its worked examples will teach students how to think like a quantum mechanic.

CRC Press
October 2022 : 396pp
Pb: 978-1-032-25602-3 : **£48.99**
Hb: 978-1-032-25603-0 : **£130**
eBook: 978-1-003-28418-5

* For full contents and more information, visit: www.routledge.com/9781032256023

Lectures On Quantum Mechanics



Gordon Baym

These lecture notes comprise a three-semester graduate course in quantum mechanics at the University of Illinois. There are a number of texts which present the basic topics very well; but since a fair quantity of the material discussed in my course was not available to the students in elementary quantum mechanics books, I was asked to prepare written notes. In retrospect these lecture notes seemed sufficiently interesting to warrant their publication in this format. The notes, presented here in slightly revised form, constitute a self-contained course in quantum mechanics from first principles to elementary and relativistic one-particle mechanics. Prerequisite to reading these notes is some familiarity with elementary quantum mechanics, at least at the undergraduate level. Preferably the reader should already have met the uncertainty principle and the concept of a wave function. Prerequisites also include sufficient acquaintance with complex variables to be able to do simple contour i

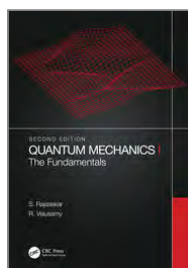
CRC Press
January 1974 : 606pp
Pb: 978-0-805-30667-5 : **£83.99**
Hb: 978-0-367-09187-3 : **£155**
eBook: 978-0-429-49926-5

* For full contents and more information, visit: www.routledge.com/9780805306675

2ND EDITION

Quantum Mechanics I

The Fundamentals



S. Rajasekar Bharathidasan University, Tiruchirapalli, India
R. Velusamy ANJA College, Tamilnadu, India

Quantum Mechanics I: The Fundamentals provides a graduate-level account of the behavior of matter and energy at the molecular, atomic, nuclear, and sub-nuclear levels. It covers basic concepts, mathematical formalism, and applications to physically important systems.

CRC Press
January 2025 : 606pp
Pb: 978-0-367-77636-7 : **£48.99**
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2ND EDITION

Quantum Mechanics II

Advanced Topics



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R. Velusamy ANJA College, Tamilnadu, India

Quantum Mechanics II: Advanced Topics offers a comprehensive exploration of the state-of-the-art in various advanced topics of current research interest. A follow-up to the authors' introductory book Quantum Mechanics I: The Fundamentals, this book expounds basic principles, theoretical treatment, case studies, worked-out examples and applications of advanced topics including quantum technologies.

CRC Press
January 2025 : 432pp
Pb: 978-0-367-77642-8 : **£48.99**
Hb: 978-0-367-77000-6 : **£94.99**
eBook: 978-1-003-17219-2

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5TH EDITION

Measurement and Detection of Radiation



Nicholas Tsoulfanidis University of Nevada, Reno, USA,
Sheldon Landsberger The University of Texas at Austin,
 USA

Measurement and Detection of Radiation, Fifth Edition provides the most up-to-date and accessible introduction to radiation detector materials, systems, and applications. It also includes more problems and updated references and bibliographies, and step-by-step derivations and numerous examples illustrate key concepts.

CRC Press

January 2025 : 642pp

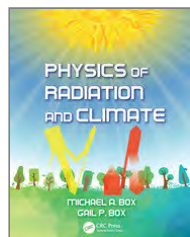
Pb: 978-1-032-04282-4 : £48.99

Hb: 978-0-367-43401-4 : £125

eBook: 978-1-003-00984-9

* For full contents and more information, visit: www.routledge.com/9781032042824

Physics of Radiation and Climate



Michael A. Box , **Gail P. Box**

This book offers an introduction to the physics of climate science. It is divided into three main sections, with the first providing an introduction to the atmosphere and ocean—their composition, thermodynamics, vertical structure, and basic flow patterns. The next chapters focus on the central physics of interactions between radiation, gases, and particles, addressing the core phenomena of absorption, emission, scattering, and radiative transfer. The final section integrates those principles and how they are applied in the study of weather and climate change.

CRC Press

October 2015 : 514pp

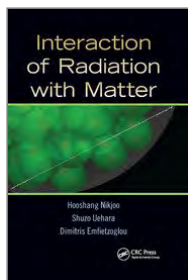
Pb: 978-1-466-57205-8 : £105

Hb: 978-1-138-42426-5 : £200

eBook: 978-0-429-19422-1

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Interaction of Radiation with Matter



Hooshang Nikjoo, Shuzo Uehara, Dimitris Emfietzoglou

Clearly progressing from an elementary level to the state of the art, this text focuses on the physics of the interactions of ionizing radiation in living matter and the Monte Carlo simulation of radiation tracks. It explores the classical physics of track description as well as modern aspects based on condensed matter physics. The authors include the relevant atomic physics background, show how to simulate radiation tracks in a computer experiment, and highlight applications in medical/health physics and radiation biology. A solutions manual is available with qualifying course adoption.

CRC Press

September 2020 : 368pp

Pb: 978-0-367-86602-0 : £52.99

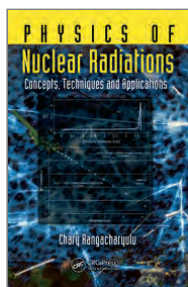
Hb: 978-1-439-85357-3 : £170

eBook: 978-0-429-06196-7

* For full contents and more information, visit: www.routledge.com/9780367866020

Physics of Nuclear Radiations

Concepts, Techniques and Applications



Chary Rangacharyulu University of Saskatchewan, Saskatoon, Canada and Nelson Mandela African Institute of Science and Technology (NM-AIST), Arusha, Tanzania

This text makes the physics of nuclear radiations accessible to students with a basic background in physics and mathematics. Rather than convince students one way or the other about the hazards of nuclear radiations, the text empowers them with tools to calculate and assess nuclear radiations and their impact. It discusses the meaning behind mathematical formulae as well as the areas in which the equations can be applied. Coverage includes archeology, health, and medical physics applications.

CRC Press

December 2013 : 383pp

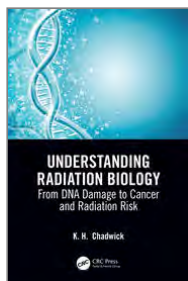
Hb: 978-1-439-85777-9 : £125

eBook: 978-0-429-06868-3

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Understanding Radiation Biology

From DNA Damage to Cancer and Radiation Risk



Kenneth Chadwick

This textbook provides a qualitative and quantitative exploration of the action of radiation on living matter. It takes readers from radiation-induced molecular damage in the nucleus of the cell and links this damage to cellular effects such as cell killing, chromosome aberrations and mutations and on to organ damage, organism killing (lethality) and cancer induction. It also touches upon radiological protection and predicting the dose effect relationship for low dose and dose rate radiation risk. This book will provide the basic foundations of radiation biology for undergraduate and graduate students in medical physics, biomedical engineering, and medicine and radiology

CRC Press

December 2019 : 252pp

Pb: 978-0-367-25376-9 : £105

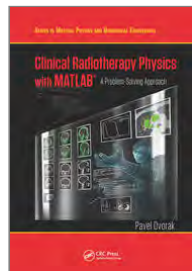
Hb: 978-0-367-25515-2 : £265

eBook: 978-0-429-28819-7

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Clinical Radiotherapy Physics with MATLAB

A Problem-Solving Approach



Pavel Dvorak

Series: Series in Medical Physics and Biomedical Engineering

The first MATLAB programming book written specifically for clinical radiotherapy medical physicists and medical physics trainees, this much-needed book teaches users how to create their own clinical applications using MATLAB, as a complement to commercial software particularly when the latter does not cover specific local clinical needs. Chapters explore key radiotherapy areas such as handling volumes, 3D dose calculation, comparing dose distributions, reconstructing treatment plans and their summations, and automated tests for machine quality assurance.

CRC Press

June 2020 : 280pp

Pb: 978-0-367-57148-1 : **£50.99**

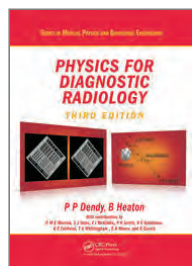
Hb: 978-1-498-75499-6 : **£140**

eBook: 978-0-429-50809-7

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3RD EDITION

Physics for Diagnostic Radiology



Philip Palin Dendy Addenbrookes NHS Trust,
Cambridge, UK, **Brian Heaton** Aberdeen Radiation
Protection Services, UK

Series: Series in Medical Physics and Biomedical Engineering

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CRC Press

August 2011 : 716pp

Hb: 978-1-420-08315-6 : **£94.99**

eBook: 978-0-429-18436-9

* For full contents and more information, visit: www.routledge.com/9781420083156

An Overview of General Relativity and Space-Time



Nicola Vittorio Università di Roma Tor Vergata, Roma, Italy

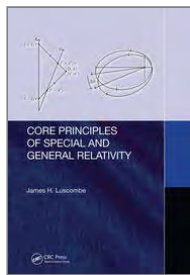
Series: Series in Astronomy and Astrophysics

This textbook equips Masters' students studying Physics and Astronomy with the necessary mathematical tools to understand the basics of General Relativity and its applications. It begins by reviewing classical mechanics with a more geometrically oriented language, continues with Special Relativity and, then onto a discussion on the pseudo-Riemannian space-times.

CRC Press
December 2022 : 270pp
Pb: 978-0-367-68304-7 : **£67.99**
Hb: 978-0-367-69288-9 : **£170**
eBook: 978-1-003-14125-9

* For full contents and more information, visit: www.routledge.com/9780367683047

Core Principles of Special and General Relativity



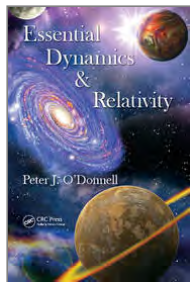
James Luscombe

This book provides an accessible, yet thorough, introduction to special and general relativity, crafted and class-tested over many years of teaching. Suitable for advanced undergraduate and graduate students, this book provides clear descriptions of how to approach the mathematics and physics involved. It also contains the latest exciting developments in the field, including dark energy, gravitational waves, and frame dragging. The table of contents has been carefully developed in consultation with a large number of instructors teaching courses worldwide, to ensure its wide applicability to modules on relativity and gravitation.

CRC Press
March 2021 : 400pp
Pb: 978-0-367-78067-8 : **£50.99**
Hb: 978-1-138-54294-5 : **£94.99**
eBook: 978-0-429-02383-5

* For full contents and more information, visit: www.routledge.com/9780367780678

Essential Dynamics and Relativity



Peter J. O'Donnell Department of Applied Mathematics and Theoretical Physics, University of Cambridge, and Fellow of St. Edmund's College, Cambridge, UK

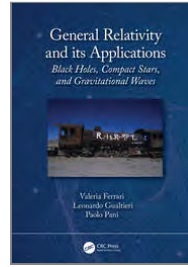
This text provides undergraduate students with an introduction to the core aspects of dynamics and special relativity. It helps students understand the precise nomenclature of dynamics and presents the mathematics of special relativity in a straightforward way. The author reiterates important ideas and terms throughout and covers concepts that are often missing from other textbooks at this level. He also places each topic within the wider constructs of the theory, without jumping from topic to topic to illustrate a point.

CRC Press
November 2014 : 336pp
Pb: 978-1-466-58839-4 : **£67.99**
Hb: 978-1-138-40418-2 : **£200**
eBook: 978-0-429-16799-7

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General Relativity and its Applications

Black Holes, Compact Stars and Gravitational Waves



Valeria Ferrari, Leonardo Gualtieri, Paolo Pani

Containing the latest, groundbreaking discoveries in the field, this text outlines the basics of Einstein's theory of gravity with a focus on its most important astrophysical consequences, including stellar structures, black holes, and the physics of gravitational waves. Pedagogical feature boxes including examples, mathematical tools, and practical applications of theory to maximise learning make this text ideal for graduate students.

CRC Press
December 2020 : 494pp
Pb: 978-0-367-62532-0 : **£89.99**
Hb: 978-1-138-58977-3 : **£235**
eBook: 978-0-429-49140-5

* For full contents and more information, visit: www.routledge.com/9780367625320

Newtonian Dynamics

An Introduction



Richard Fitzpatrick The University of Texas, Austin, USA

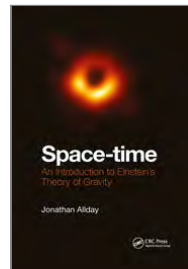
This textbook provides a comprehensive review of Newtonian dynamics at a level suitable for undergraduate physics students. It demonstrates that Newton's three laws of motion, combined with a few simple force laws, can not only describe the motions of everyday objects observed on the surface of the Earth, but can also account for the motions of celestial objects seen in the sky. The book will start off at a level suitable for undergraduate (freshman) physics students and will very gradually increase, until, towards the end, it will approach (but not quite reach) a level characteristic of a graduate (senior) physics course.

CRC Press
January 2024 : 284pp
Pb: 978-1-032-05666-1 : **£49.99**
Hb: 978-1-032-04662-4 : **£94.99**
eBook: 978-1-003-19864-2

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Space-time

An Introduction to Einstein's Theory of Gravity



Jonathan Allday

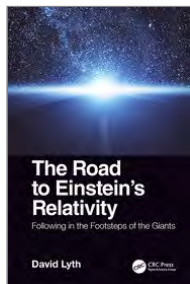
This book, suitable for interested post-16 school pupils or undergraduates looking for a supplement to their course text, develops our modern view of space-time and its implications in the theories of gravity and cosmology. While aspects of this topic are inevitably abstract, the book seeks to ground thinking in observational and experimental evidence where possible. In addition, some of Einstein's philosophical thoughts are explored and contrasted with our modern views. Written in an accessible yet rigorous style, Jonathan Allday, a highly accomplished writer, brings his trademark clarity and engagement to these fascinating subjects, which underpin so much of modern physics.

CRC Press
March 2021 : 370pp
Pb: 978-0-367-77969-6 : **£46.99**
Hb: 978-1-138-05668-8 : **£120**
eBook: 978-1-315-16514-1

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The Road to Einstein's Relativity

Following in the Footsteps of the Giants



David Lyth Lancaster University, United Kingdom

Series: Discovering Physics

Expertly guided by renowned cosmologist Dr. David Lyth, learn about the pioneering scientists whose work provided the foundation for Einstein's formulation of his theories of relativity, and about Einstein's groundbreaking life and work as well. This highly readable and accessible panorama of the field delicately balances history and science as it takes the reader on an adventure through the centuries. Without complex mathematics or scientific formulae, this book will be of interest to all, even those without a scientific background, who are intrigued to find out more about what paved the way for one of our most famous physicists to push the boundaries of physics to new lengths.

CRC Press

January 2019 : 168pp

Pb: 978-0-367-00253-4 : **£28.99**

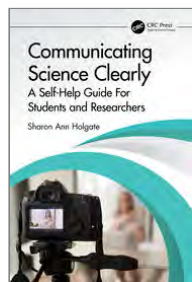
Hb: 978-0-367-02285-3 : **£120**

eBook: 978-0-429-40044-5

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Communicating Science Clearly

A Self-Help Guide For Students and Researchers



Sharon Ann Holgate

This unique self-help guide equips undergraduates, postgraduate students, and early career researchers within the sciences with transferrable communication skills that they can adapt, and refer back to, as they progress through their careers. It provides practical guidance on how to best communicate science in a range of different settings.

CRC Press

November 2023 : 162pp

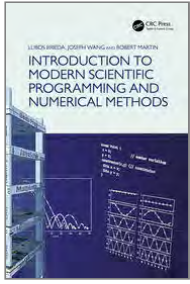
Pb: 978-1-032-06911-1 : **£39.99**

Hb: 978-1-032-07422-1 : **£99.99**

eBook: 978-1-003-20682-8

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Introduction to Modern Scientific Programming and Numerical Methods



Lubos Brieda , Joseph Wang , Robert Martin

This book introduces the reader not only to the mathematical foundation but also to the programming paradigms encountered in modern hybrid software-hardware scientific computing. After completing the text, the reader will be well-versed in the use of different numerical techniques, programming languages, and hardware architectures, and will be able to select the appropriate software and hardware tool for their analysis.

CRC Press

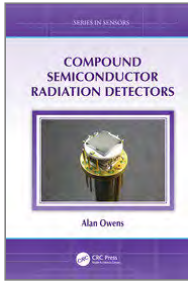
October 2024 : 472pp

Hb: 978-0-367-67191-4 : £78.99

eBook: 978-1-003-13223-3

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Compound Semiconductor Radiation Detectors



Alan Owens European Space Agency, Noordwijk, The Netherlands

Series: Series in Sensors

For many applications, compound semiconductors are now viable competitors to elemental semiconductors because of their wide range of physical properties. This book describes all aspects of radiation detection and measurement using compound semiconductors, including crystal growth, detector fabrication, contacting, and spectroscopic performance (with particular emphasis on the X- and gamma-ray regimes). A concentrated reference for researchers in various disciplines as well as graduate students in specialized courses, the text outlines the potential and limitations of semiconductor detectors.

CRC Press

October 2016 : 580pp

Pb: 978-1-138-19958-3 : **£75.99**

Hb: 978-1-439-87312-0 : **£200**

eBook: 978-0-429-06231-5

* For full contents and more information, visit: www.routledge.com/9781138199583

Modern Semiconductor Physics and Device Applications



Vitalii Dugaev, Vladimir Litvinov Sierra Nevada Corporation, Irvine, California, USA

This textbook provides a theoretical background for contemporary trends in solid state theory and semiconductor device physics. It discusses advanced methods of quantum mechanics and field theory and is therefore primarily intended for graduate students in theoretical and experimental physics who have already studied electrodynamics, statistical physics, and quantum mechanics.

CRC Press

May 2023 : 397pp

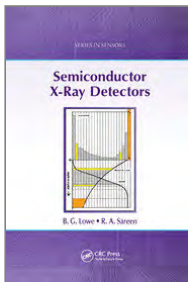
Pb: 978-0-367-25080-5 : **£50.99**

Hb: 978-0-367-25082-9 : **£140**

eBook: 978-0-429-28592-9

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Semiconductor X-Ray Detectors



B. G. Lowe, R. A. Sareen

Series: Series in Sensors

This book focuses on the history and development of Si(Li) X-Ray Detectors, while providing an up-to-date review of the principles, practical applications, and state of the art of semiconductor x-ray detectors. It describes many of the facets of x-ray detection and measurement using semiconductors, from manufacture to implementation. The initial chapters summarize relevant background physics, materials science, and engineering aspects. Later chapters compare and contrast the manufacture and physical properties of systems and materials currently employed, enabling readers to fully understand the materials and scope for applications.

CRC Press

November 2017 : 624pp

Pb: 978-1-138-03385-6 : **£71.99**

Hb: 978-1-466-55400-9 : **£200**

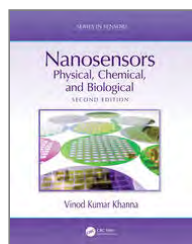
eBook: 978-0-429-08824-7

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2ND EDITION

Nanosensors

Physical, Chemical, and Biological



Vinod Kumar Khanna CSIR-Central Electronics
Engineering Research Institute, India

Series: Series in Sensors

A growing and exciting field, nanosensors have recently spurred considerable research endeavors across the globe, driving a need for the development of new device concepts and engineering nanostructured materials with controlled properties. *Nanosensors, Second Edition* offers a panoramic view of the field and related nanotechnologies with extraordinary clarity and depth. This is an ideal reference for researchers and industry professionals engaged in the frontier areas of material science and semiconductor fabrication as well as graduate students in physics and engineering pursuing electrical engineering and electronics courses with a focus on nanoscience and nanotechnology.

CRC Press

August 2022 : 578pp

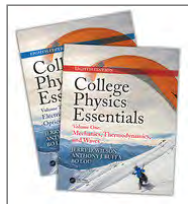
Pb: 978-0-367-51480-8 : **£105**

Hb: 978-0-367-45705-1 : **£275**

eBook: 978-1-003-02555-9

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College Physics Essentials, Eighth Edition (Two-Volume Set)



Jerry D. Wilson, Anthony J. Buffa, Bo Lou

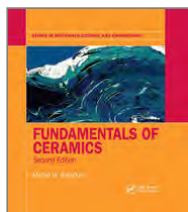
This edition provides a streamlined update of a major textbook for algebra-based physics, reflecting the demand by instructors for more substance. The authors enhance emphasis on worked examples to enhance reader engagement, together with expanded problem sets that build from conceptual understanding to numerical solutions and real-world applications. It is the textbook of choice for those seeking a basic understanding of key physics concepts and how to apply them to real problems. The first volume covers mechanics, solids and fluids, heat, thermodynamics, vibrations and waves, and sound. The second volume covers electricity and magnetism, optics, atomic, nuclear, and quantum physics.

CRC Press
July 2022: 812pp
Pb: 978-1-032-33726-5 : £101.98
Hb: 978-0-815-35546-5 : £280
eBook: 978-1-351-12992-3

* For full contents and more information, visit: www.routledge.com/9781032337265

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Michel Barsoum

Series: Series in Materials Science and Engineering

This second edition of Fundamentals of Ceramics adds a section on density functional theory calculations for shedding light on properties. It also adds more on applications, including solid oxide fuel cells as a case study and a major overhaul of the last chapter on optical properties. There's also new and extended discussion of such topics as non-parabolic oxidation, dislocation creep, thermal conductivity, ferroelectric ceramics, ferromagnetic ceramics, scattering mechanisms, surface tension, and processing of ceramics from aqueous environments.

CRC Press
June 2022: 644pp
Pb: 978-1-032-33730-2 : £50.99
Hb: 978-1-498-70813-5 : £140
eBook: 978-1-498-70816-6

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2ND EDITION

Fundamentals of Soft Matter Science



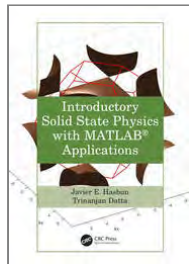
Linda S. Hirst University of California, Merced, USA

This revised edition continues to provide the most approachable introduction to the structure, characteristics, and everyday applications of soft matter. It begins with a substantially revised overview of the underlying physics and chemistry common to soft materials. Subsequent chapters comprehensively address the different classes of soft materials, from liquid crystals to surfactants, polymers, colloids, and biomaterials, with vivid, full-color illustrations throughout.

CRC Press
August 2019: 304pp
Pb: 978-1-138-72444-0 : £94.99
Hb: 978-1-138-72478-5 : £245
eBook: 978-1-315-19238-3

* For full contents and more information, visit: www.routledge.com/9781138724440

Introductory Solid State Physics with MATLAB Applications



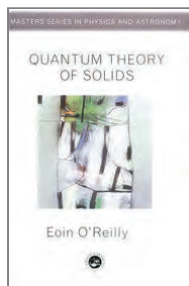
Javier E. Hasbun, Trinanjan Datta

Solid state physics, the study and prediction of the fundamental physical properties of materials, forms the backbone of modern materials science and has many technological applications. The unique feature of this text is the MATLAB®-based computational approach with several numerical techniques and simulation methods included. This is highly effective in addressing the need for visualization and a direct hands-on approach in learning the theoretical concepts of solid state physics. The code is freely available to all textbook users.

CRC Press
October 2019: 570pp
Hb: 978-1-466-51230-6 : £94.99
eBook: 978-0-429-08660-1

* For full contents and more information, visit: www.routledge.com/9781466512306

Quantum Theory of Solids



Eoin O'Reilly NMRC, Cork, Ireland

Series: Master's Series in Physics and Astronomy

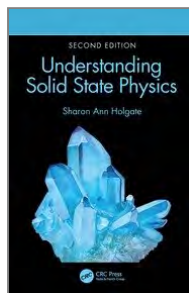
Although the topic is a well established sub-set of solid state physics, Quantum Theory of Solids develops the concepts of quantum theory for the solid state in a single, one-stop reference. Readers with previous courses in quantum mechanics and solid state physics can develop further, learning the three most significant topics in solid state physics: semiconductors, magnetism, and superconductivity. The author explains quantum mechanics techniques, such as the variational method and perturbation theory, not usually found in introductory courses. Covering the necessary physics from a basic to advanced level, the text is suitable for a stand-alone final year course.

CRC Press
September 2002: 264pp
Pb: 978-0-748-40627-2 : £67.99
Hb: 978-0-748-40628-9 : £130
eBook: 978-1-315-27319-8

* For full contents and more information, visit: www.routledge.com/9780748406272

2ND EDITION

Understanding Solid State Physics



Sharon Ann Holgate

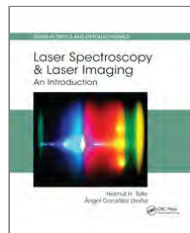
Keeping the mathematics to a minimum yet losing none of the required rigor, Understanding Solid State Physics, Second Edition clearly explains basic physics principles to provide a firm grounding in the subject. This new edition has been fully updated throughout, with recent developments and literature in the field, including graphene and the use of quasicrystalline materials, in addition to featuring new journalistic boxes and the reciprocal lattice.

CRC Press
April 2021: 392pp
Pb: 978-0-367-24985-4 : £105
Hb: 978-0-367-25528-2 : £275
eBook: 978-0-429-28823-4

* For full contents and more information, visit: www.routledge.com/9780367249854

Laser Spectroscopy and Laser Imaging

An Introduction



Helmut H. Telle , Ángel González Ureña

Series: Series in Optics and Optoelectronics

Developments in and applications of laser spectroscopy and laser imaging are growing rapidly, specifically now that spectral analytical methodologies are merging with laser imaging techniques. It is the intention of this book to provide researchers, both in industry and academia, with a concise collection of laser analysis and imaging techniques. Written by two leaders in the field, it will introduce the reader to individual techniques in a tutorial-fashion and provide key examples and including details of the latest techniques.

CRC Press

December 2019 : 750pp

Pb: 978-0-367-86821-5 : **£78.99**

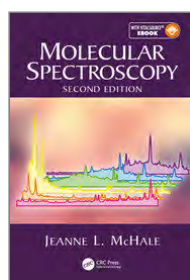
Hb: 978-1-466-58822-6 : **£190**

eBook: 978-1-315-15698-9

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2ND EDITION

Molecular Spectroscopy



Jeanne L. McHale Washington State University, Pullman, USA

This newly expanded, extensively updated edition provides the most accessible and complete introduction to spectroscopy and dynamics of molecules in condensed phases. It covers practical spectroscopic approaches relevant for rapidly advancing areas such as nanomaterials and interfaces for optoelectronic devices, bioinspired materials for solar energy conversion, and biomedical applications of emissive nanoparticles. New chapters reflect the importance of time-resolved and nonlinear optical spectroscopy. Additional topics include terahertz spectroscopy, single molecule spectroscopy, Fourier-transform techniques, atomic spectroscopy, Stark spectroscopy, and computational approaches.

CRC Press

May 2017 : 475pp

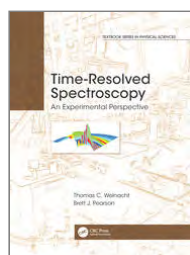
Hb: 978-1-466-58658-1 : **£99.99**

eBook: 978-1-315-11521-4

* For full contents and more information, visit: www.routledge.com/9781466586581

Time-Resolved Spectroscopy

An Experimental Perspective



Thomas Weinacht , Brett J. Pearson

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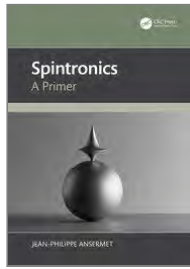
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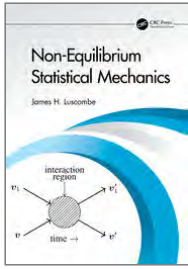
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Statistical mechanics provides a framework for relating the properties of macroscopic systems (large collections of atoms, such as in a solid) to the microscopic properties of its parts. However, what happens when macroscopic systems are not in thermal equilibrium, where time is not only a relevant variable, but also essential? That is the province of nonequilibrium statistical mechanics – there are many ways for systems to be out of equilibrium! The subject is governed by fewer general principles than equilibrium statistical mechanics and consists of a number of different approaches for describing nonequilibrium systems.

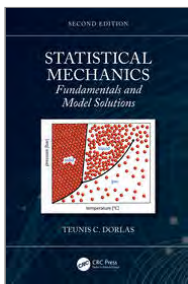
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Fundamentals and Model Solutions



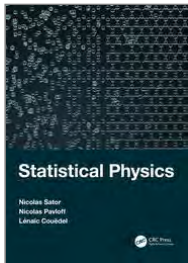
Teunis C Dorlas Dublin Institute for Advanced Studies, Ireland

Fully updated throughout and with new chapters on the Mayer expansion for classical gases and on cluster expansion for lattice models, this new edition of Statistical Mechanics: Fundamentals and Model Solutions provides a comprehensive introduction to equilibrium statistical mechanics for advanced undergraduate and graduate students of mathematics and physics.

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Statistical Physics



Nicolas Sator , Nicolas Pavloff , Lenaïc Couedel

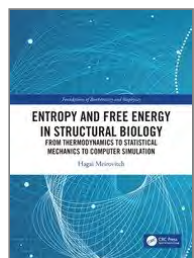
This book presents an introduction to the main concepts of statistical physics, followed by applications to specific problems and more advanced concepts, selected for their pedagogical or practical interest. Particular attention has been devoted to the presentation of the fundamental aspects, including the foundations of statistical physics, as well as to the discussion of important physical examples.

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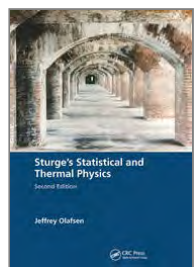
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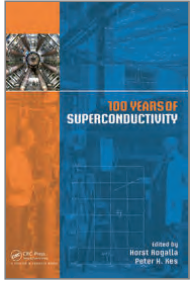
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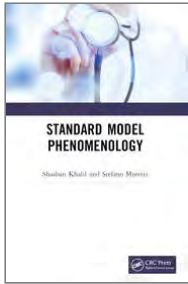
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Standard Model Phenomenology



Shaaban Khalil , Stefano Moretti University of Southampton, Highfield Campus, United Kingdom

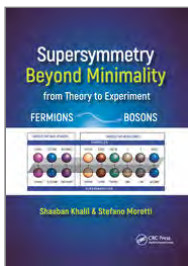
This new book is fully up to date with all the latest developments on both theoretical and experimental investigations of the Standard Model (SM) of particle physics with a particular emphasis on its historical development on both sides.

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August 2024 : 246pp
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CRC Press
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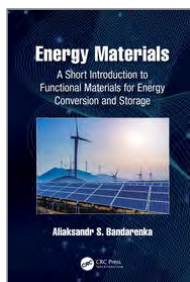
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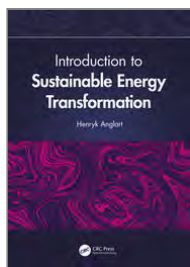
Aliaksandr S. Bandarenka

This textbook provides readers with an accessible overview of the functional materials currently employed or investigated for energy provision, conversion, and storage.

CRC Press
May 2023 : 252pp
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Hb: 978-0-367-45736-5 : **£140**
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Introduction to Sustainable Energy Transformation



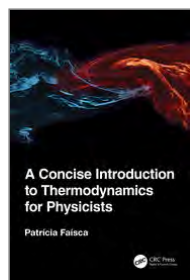
Henryk Anglart

This textbook provides an accessible introduction to various energy transformation technologies and their influences on the environment. Here the energy transformation is understood as any physical process induced by humans, in which energy is intentionally transformed from one form to another. This book provides an accessible introduction to the subject: covering the theory, principles of design, operation, and efficiency of the systems in addition to discerning concepts such as energy, entropy, exergy, efficiency, and sustainability.

CRC Press
November 2021 : 386pp
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A Concise Introduction to Thermodynamics for Physicists



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This introductory textbook on thermodynamics is designed for undergraduate students in physics, physics engineering, biophysics and biomedical engineering who are being exposed to the ideas and concepts of thermal physics for the first time. While this is a self-contained text on thermodynamics (i.e. focused on macroscopic physics), emphasis is placed on the microscopic underlying model in order to facilitate the understanding of thermodynamics concepts and properties, and motivate a future course on statistical physics. This book will equip the readers with an understanding of the scope and applicability of this discipline and will be able to apply it to study any physical system.

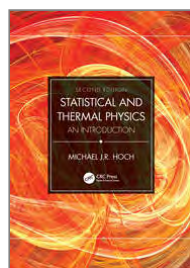
CRC Press
September 2022 : 236pp
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2ND EDITION

Statistical and Thermal Physics

An Introduction



Michael J.R. Hoch

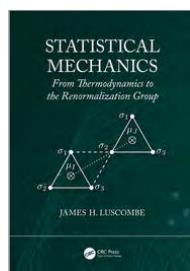
Thermal and statistical physics has established the principles and procedures needed to understand and explain the properties of systems consisting of macroscopically large numbers of particles. By developing microscopic statistical physics and macroscopic classical thermodynamic descriptions in tandem, *Statistical and Thermal Physics: An Introduction* provides insight into basic concepts and relationships at an advanced undergraduate level.

CRC Press
May 2021 : 348pp
Pb: 978-0-367-46134-8 : **£94.99**
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Statistical Mechanics

From Thermodynamics to the Renormalization Group



James H. Luscombe

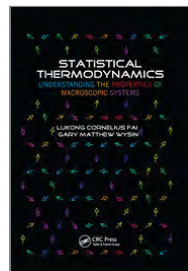
This textbook provides a comprehensive, yet accessible, introduction to statistical mechanics. Crafted and class-tested over many years of teaching, it carefully guides advanced undergraduate and graduate students who are encountering statistical mechanics for the first time through this – sometimes – intimidating subject. The book provides a strong foundation in thermodynamics and the ensemble formalism of statistical mechanics.

CRC Press
December 2020 : 400pp
Pb: 978-1-138-54297-6 : **£73.99**
Hb: 978-0-367-68927-8 : **£190**
eBook: 978-1-003-13966-9

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Statistical Thermodynamics

Understanding the Properties of Macroscopic Systems



Lukong Cornelius Fai University of Dschang, Cameroon and The Abdus Salam International Centre For Theoretical Physics, Trieste, Italy, **Gary Matthew Wysin** Kansas State University, Manhattan, USA

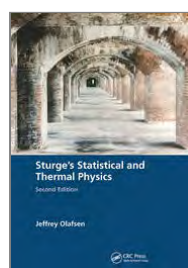
Presenting a look at the evolution of modern statistical thermodynamics, this book provides a detailed overview of the statistical principles used to obtain the physical and thermodynamic properties of macroscopic systems. Going further than many advanced textbooks, it includes Bose-Einstein, Fermi-Dirac statistics, and Lattice dynamics as well as applications in polaron theory, electronic gas in a magnetic field, thermodynamics of dielectrics, and magnetic materials in a magnetic field. The text also examines statistical thermodynamics using functional integration and Feynman path integrals. In addition, it features physical results as well as worked problems and a solutions manual.

CRC Press
September 2019 : 548pp
Pb: 978-0-367-38076-2 : **£65.99**
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Jeffrey Olafsen

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CRC Press
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Pb: 978-0-367-77949-8 : **£50.99**
Hb: 978-1-482-25600-0 : **£120**
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Thermal Physics Tutorials with Python Simulations



Minjoon Kouh , Taejoon Kouh

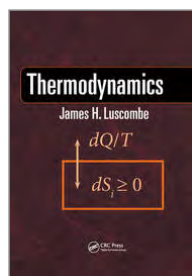
Series: Series in Computational Physics

This book may serve as a thermal physics textbook for a semester-long undergraduate thermal physics course or may be used as a tutorial on scientific computing with focused examples from thermal physics. This book will also appeal to engineering students studying intermediate-level thermodynamics as well as computer science students looking to understand how to apply their computer programming skills to science.

CRC Press
December 2024 : 238pp
Pb: 978-1-032-26343-4 : **£48.99**
Hb: 978-1-032-25756-3 : **£83.99**
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Thermodynamics



James Luscombe

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CRC Press

June 2020 : 240pp

Pb: 978-0-367-57199-3 : **£50.99**

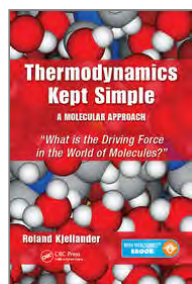
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Thermodynamics Kept Simple - A Molecular Approach

What is the Driving Force in the World of Molecules?



Roland Kjellander University of Gothenburg, Sweden

This book offers a unique way of teaching and thinking about basic thermodynamics that helps students overcome common conceptual problems. It delivers a brilliantly conceived introduction to thermodynamics at the molecular level, presenting the core laws with clear explanations. The text covers key concepts such as entropy, energy transfer, heat exchange, work, enthalpy, free energy, irreversible and reversible processes, chemical equilibrium, and phase transitions in the molecular world, employing simple but well-chosen examples to supply insight into the molecular events underlying the thermodynamic macroscopic description.

CRC Press

August 2015 : 252pp

Pb: 978-1-482-24410-6 : **£51.99**

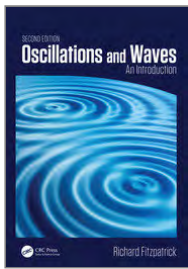
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Oscillations and Waves

An Introduction, Second Edition



Richard Fitzpatrick The University of Texas, Austin, USA

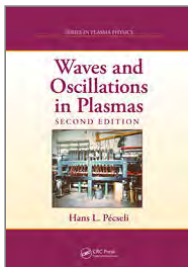
Emphasizing physics over mathematics, this popular, classroom-tested text helps advanced undergraduates acquire a sound physical understanding of wave phenomena. This second edition of *Oscillations and Waves: An Introduction* contains new widgets, animations in Python, and exercises, as well as updated chapter content throughout; continuing to ease the difficult transition for students between lower-division courses that mostly encompass algebraic equations and upper-division courses that rely on differential equations.

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Waves and Oscillations in Plasmas



Hans L. Pecseli

Series: Series in Plasma Physics

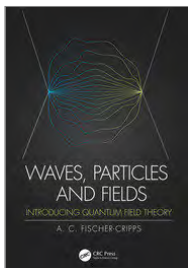
Waves and Oscillations in Plasmas addresses central issues in modern plasma sciences, working gradually from an introductory to an advanced level. This second edition has been fully updated, and includes the latest developments in fluid models as well as kinetic plasma models, including a detailed discussion of, for instance, collisionless Landau damping. Offering a clear separation of linear and nonlinear models, the book can be tailored for readers of varying levels of expertise in areas as diverse as the space sciences, laboratory experiments, plasma processing, and more.

CRC Press
December 2021 : 554pp
Pb: 978-1-032-23642-1 : **£50.99**
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Waves, Particles and Fields

Introducing Quantum Field Theory



Anthony C. Fischer-Cripps Fischer-Cripps Laboratories Pty Ltd, Sydney, Australia

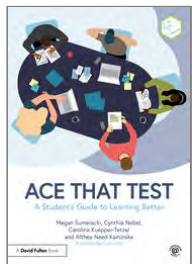
This book presents a background to the concepts of quantum physics; from its inception and the original quantum physics of the Schrodinger Equation through to modern-day theories. It discusses the basics of mechanics, relativity, old and new quantum theory, and Feynman and the concept of a quantum field. It provides the necessary foundation for readers to then progress to more advanced texts on quantum field theory. This book will be of interest to undergraduate students in physics and mathematics and an interested, general audience.

CRC Press
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eBook: 978-0-429-24384-4

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Ace That Test

A Student's Guide to Learning Better



Megan Sumeracki, Cynthia Nebel, Carolina Kuepper-Tetzl, Althea Need Kaminske

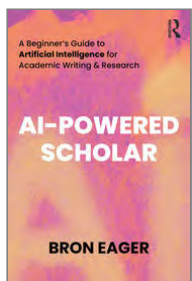
This exciting new text reveals the effective study strategies that will help you to use your time more efficiently, ace your tests, and retain information over time. In full colour and accompanied by beautifully illustrated graphics, *Ace That Test* offers evidence-based learning strategies that students can use during their study sessions, including dual coding and the power of retrieving what they know. With QR codes linking to answers to embedded questions and supplemental material, this is essential reading for college, university, and school students as well as educators teaching study skills or learning to learn courses.

Routledge
July 2023 : 146pp
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eBook: 978-1-003-32753-0

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AI-Powered Scholar

A Beginner's Guide to Artificial Intelligence for Academic Writing & Research



Bron Eager University of Tasmania, Australia

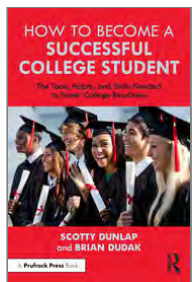
This book is a practical and comprehensive guide on using AI tools to streamline and optimise the academic writing and research process. Through a series of step-by-step instructions and practical tips, this book provides readers with the knowledge and tools they need to leverage the power of AI to produce high-quality academic publications. Whether you're a university student or a tenured professor, this book is your indispensable companion to beginning your path towards becoming an AI-powered scholar.

Routledge
December 2024 : 168pp
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The Tools, Habits, and Skills Needed to Foster College Readiness



Scotty Dunlap Eastern Kentucky University, USA, **Brian Dudak** Middle Tennessee State University, USA

This book is your one-stop shop for the academic tools and habits needed to make your transition from high school to college a resounding success! The shift from high school to college can be a challenge, with many students finding the skills that had previously worked so well no longer seem to be enough. *How to Become a Successful College Student* outlines the strategies you need to 'level up' your current processes in order to foster learning and retention of information in a new and rigorous environment. This guide is a must-have resource for anyone who wants to maximize their higher education experience.

Prufrock Press
November 2023 : 202pp
Pb: 978-1-032-52409-2 : **£14.99**
eBook: 978-1-003-41268-7

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How to Solve A Problem

Insights for Critical Thinking, Problem-Solving, and Success in College



Kelling J. Donald University of Richmond, USA

This concise and accessible resource offers new college students, especially those in science degree programs, guidance on engaging successfully with the classroom experience and skillfully tackling technical or scientific questions. The author provides insights on identifying, from the outset, individual markers for what success in college will look like for students, how to think about the engagement with professors as a partnership, and how to function effectively in that partnership toward achieving their pre-defined goals or markers of success. It is an ideal companion for science degree prospects and first-generation students seeking insight into the college experience.

CRC Press
April 2023 : 152pp
Pb: 978-1-032-20361-4 : **£26.99**
Hb: 978-1-032-20368-3 : **£66.99**
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Edited by **Nadia Siddiqui** Durham University, UK, **Stephen Gorard** Durham University, UK

This edited collection provides real and outstanding examples of multiple research design methodologies which will allow doctoral researchers to develop a wide set of research skills, leading to the development of a high-quality academic thesis from which peer reviewed research papers and books can emerge. Ideal reading for doctoral students and supervisors, this book is a source of encouragement and motivation for new researchers seeking to challenge general perceptions in the social sciences that PhD or other doctoral research projects must be small-scale rather than trivial studies, but can instead produce robust findings that have real-world implications.

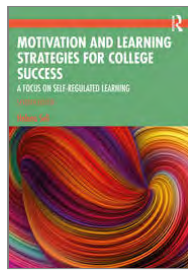
Routledge
April 2022 : 278pp
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eBook: 978-1-003-20136-6

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7TH EDITION

Motivation and Learning Strategies for College Success

A Focus on Self-Regulated Learning



Helena Seli

Now in its 7th edition, *Motivation and Learning Strategies for College Success: A Focus on Self-Regulated Learning* provides a framework organized around motivation, methods of learning, time management, control of the physical and social environment, and monitoring performance that makes it easy for students to recognize what they need to do to become successful learners. Full of rich pedagogical features and exercises, students will find Follow-Up Activities, Opportunities for Reflection, Chapter-End Reviews, Key Points, and a Glossary.

Routledge
August 2023 : 304pp
Pb: 978-1-032-47020-7 : **£54.99**
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eBook: 978-1-003-38527-1

* For full contents and more information, visit: www.routledge.com/9781032470207

2ND EDITION

Stress, Cognition and Health

Real World Examples and Practical Applications



Tony Cassidy

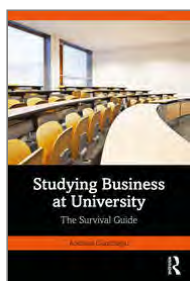
The new edition of this bestselling textbook provides a comprehensive overview of the latest research on stress and health, moving beyond the former deficit model to a resource growth model. It examines all aspects of the topic, from how the external world and the impact of technology makes demands upon individuals, through biological and psychological processes, to outcomes in terms health and wellbeing. The process is set within a dynamic, multilevel systems and developmental lifespan perspective. The book includes a history of the evolution of stress research and the biological systems and immune responses that translate external pressures into health outcomes.

Routledge
October 2022 : 148pp
Pb: 978-0-367-56418-6 : **£39.99**
Hb: 978-0-367-56634-0 : **£140**
eBook: 978-1-003-09873-7

* For full contents and more information, visit: www.routledge.com/9780367564186

Studying Business at University

The Survival Guide



Andreas Giazitzoglu

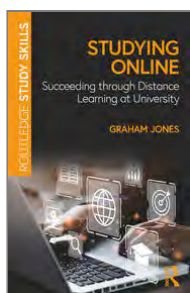
Studying Business at University provides new and prospective undergraduates with a concise and easy-to-read insight into what life is like as a business student today. Written in the style of an email dialogue between two students, it informs and reassures the new business student who is seeking advice on how to get the most out of their degree experience, and covers the whole degree from application to graduation – and beyond. This book will also be a helpful reference for lecturers who want to give their students as much support as possible as they learn to balance the demands of academia with the pressures of the real world.

Routledge
March 2025 : 134pp
Pb: 978-1-032-74042-3 : **£20.99**
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Studying Online

Succeeding through Distance Learning at University



Graham Jones University of Buckingham, UK

Series: *Routledge Study Skills*

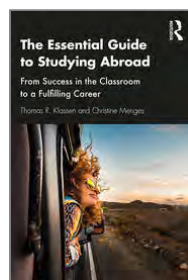
Helping you get to grips with online learning, this book contains a wealth of practical tips and strategies that will make studying online easier. Covering the advantages of online learning as well as the problems you might face, this book provides tried and tested advice to help you overcome those difficulties so that you can work to the best of your abilities. Identifying techniques designed specifically for studying online, with step-by-step instructions, as well as guidance on using online study software to the best effect, this must-have student companion provides tips and tricks to make university distance studying both effective and enjoyable.

Routledge
July 2022 : 244pp
Pb: 978-1-032-19539-1 : **£18.99**
Hb: 978-1-032-19538-4 : **£140**
eBook: 978-1-003-25969-5

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The Essential Guide to Studying Abroad

From Success in the Classroom to a Fulfilling Career



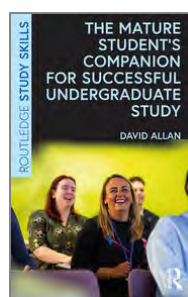
Thomas R. Klassen York University, Canada, **Christine Menges** WHU – Otto Beisheim School of Management, Germany

This book is an indispensable how-to-guide on flourishing when studying abroad, and how to use an international education to begin a fulfilling career after graduation. Written in an engaging and accessible style, using many examples, case studies and links to resources, the book reduces the stress of studying abroad. Covering all aspects of the international student experience – inside and outside the classroom – the book encourages young people to perform their very best and succeed in their new environment. International students preparing for cross cultural learning and recent graduates looking for employment will find this book both practical and inspiring.

Routledge
August 2019 : 238pp
Pb: 978-0-367-23516-1 : **£35.99**
Hb: 978-0-367-23515-4 : **£155**
eBook: 978-0-429-28011-5

* For full contents and more information, visit: www.routledge.com/9780367235161

The Mature Student's Companion for Successful Undergraduate Study



David Allan Edge Hill University, UK

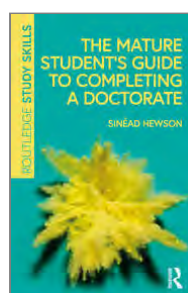
Series: *Routledge Study Skills*

A guiding resource and supportive companion, this book is designed for mature individuals intending to undertake an undergraduate degree. With a wealth of practical strategies for developing study skills, whilst, at the same time, addressing the changes that university study can bring, this key text highlights the significance of individual strengths obtained from life experiences, and demonstrates their importance in learning as a mature student. Packed full of activities to support development and case studies to exemplify a range of situations, this is a must-read for anyone looking to undertake an undergraduate degree as a mature student.

Routledge
June 2025 : 170pp
Pb: 978-1-032-61924-8 : **£17.99**
Hb: 978-1-032-61923-1 : **£155**
eBook: 978-1-032-61925-5

* For full contents and more information, visit: www.routledge.com/9781032619248

The Mature Student's Guide to Completing a Doctorate



Sinéad Hewson

Series: *Routledge Study Skills*

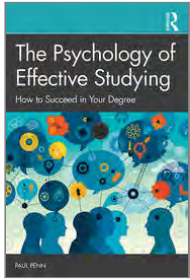
Carefully structured to make it accessible and easy to follow, this thought-provoking book encourages the reader to facilitate a dialogue across disciplines so that unconventional students are acknowledged and can discover a successful path towards admission and PhD completion. It is a must-read for advanced academic researchers, advanced post-graduate students and experienced professionals with vocational backgrounds who are seeking recognition for their knowledge and alternative pathways to contribute to the sector.

Routledge
April 2024 : 282pp
Pb: 978-1-032-53800-6 : **£17.99**
Hb: 978-1-032-53801-3 : **£145**
eBook: 978-1-003-41369-1

* For full contents and more information, visit: www.routledge.com/9781032538006

The Psychology of Effective Studying

How to Succeed in Your Degree



Paul Penn Independent Scholar, UK

This book provides a vital guide for students to key study skills that are instrumental in success at university. It uses a combination of research from cognitive psychology, humour and practical examples to convey where students often go fundamentally wrong in their studying practices and provides clear and concise advice on how they can improve. The book covers time management, academic integrity, writing essays, team work, and other key required skills for academic study. Written in a humorous and irreverent tone, and including illustrations and examples from popular culture, this is the ideal alternative and accessible study skills resource for any student at undergraduate level.

Routledge

August 2019 : 244pp

Pb: 978-1-138-57092-4 : **£23.99**

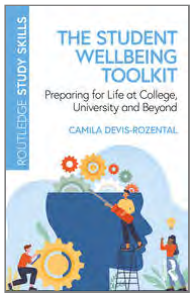
Hb: 978-1-138-57090-0 : **£140**

eBook: 978-0-203-70311-3

* For full contents and more information, visit: www.routledge.com/9781138570924

The Student Wellbeing Toolkit

Preparing for Life at College, University and Beyond



Camila Devis-Rozental Bournemouth University, UK

Series: Routledge Study Skills

The Student Wellbeing Toolkit puts wellbeing at the centre of your journey into university and beyond. By encouraging self-efficacy and a focus on the things you can control, it provides clear guidance to enhance wellbeing and opportunities for self-reflection that help develop self-awareness and prosocial skills for life. Drawing on research evidenced theories around positive psychology, theories of learning, motivation, and self-development, the book explores what, how, and why these areas are key to our wellbeing and the rationale for taking them into account to enable you to flourish and thrive at university.

Routledge

June 2023 : 286pp

Pb: 978-1-032-32966-6 : **£18.99**

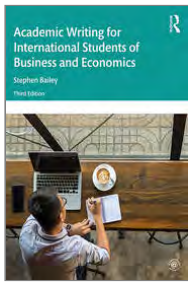
Hb: 978-1-032-32965-9 : **£155**

eBook: 978-1-003-31754-8

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3RD EDITION

Academic Writing for International Students of Business and Economics



Stephen Bailey Taught English internationally and at the Univ of Nottingham & Derby Univ & has previously published with Routledge

Now in its third edition, this key text helps international students succeed in writing essays and reports for their business and economics course. Thoroughly revised and updated, it is designed to be used by teachers in the classroom and students for self-study. New topics in this edition include writing in groups, written British and American English, and reflective writing. In addition, the new interactive website has a full set of teaching notes as well as more challenging exercises, revision material and links to other sources. Written to deal with the specific language issues faced by international students, this practical, user-friendly book is an invaluable guide.

Routledge
January 2020 : 346pp
Pb: 978-0-367-28031-4 : **£30.99**
Hb: 978-0-367-28030-7 : **£155**
eBook: 978-0-429-29927-8

* For full contents and more information, visit: www.routledge.com/9780367280314

Academic Writing for University Students



Stephen Bailey Taught English internationally and at the Univ of Nottingham & Derby Univ & has previously published with Routledge

Designed to help students succeed in writing university-level essays and reports, this book has been carefully designed for use both in the classroom and for self-study. Covering three key areas: the writing process, elements of writing and writing models, it encourages critical writing and developing a voice. Academic Writing in the University provides all of the tools necessary to produce excellent written work. With progress checks, practical examples and self-testing units, this practical, user-friendly book covers all stages of the writing process and is an invaluable guide to academic writing in the university.

Routledge
December 2021 : 324pp
Pb: 978-0-367-44539-3 : **£24.99**
Hb: 978-0-367-44538-6 : **£155**
eBook: 978-1-003-01021-0

* For full contents and more information, visit: www.routledge.com/9780367445393

6TH EDITION

Academic Writing

A Handbook for International Students



Stephen Bailey Taught English internationally and at the Univ of Nottingham & Derby Univ & has previously published with Routledge

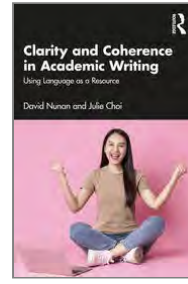
The sixth edition of this popular book has been written to help international students succeed in writing essays and reports for their English-language academic courses. Thoroughly revised and updated in a streamlined format making it even easier to use, it is designed to let readers find the support they need easily, both in the classroom and for self-study. The book consists of three parts, comprising a total of 28 units, all of which are fully cross-referenced and can be taught in conjunction with each other or used for reference. A progress check at the end of each part allows students to self-assess their learning.

Routledge
March 2025 : 320pp
Pb: 978-1-032-83417-7 : **£28.99**
Hb: 978-1-032-83418-4 : **£155**
eBook: 978-1-003-50926-4

* For full contents and more information, visit: www.routledge.com/9781032834177

Clarity and Coherence in Academic Writing

Using Language as a Resource



David Nunan, Julie Choi University of Melbourne, Australia

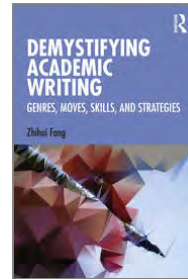
This book presents a lively, rich, and concise introduction to the key concepts and tools for developing clarity and coherence in academic writing. Well-known authors and linguists David Nunan and Julie Choi provide examples of the linguistic procedures that writers can draw on to enhance clarity and coherence for the reader. This resource makes complex concepts accessible to the emergent writer and illustrates how these concepts can be applied to their own writing. In-text projects and tasks invite you, the reader, to experiment with principles and ideas in developing your identity and voice as a writer.

Routledge
March 2023 : 224pp
Pb: 978-1-032-01382-4 : **£29.99**
Hb: 978-1-032-01559-0 : **£140**
eBook: 978-1-003-17909-2

* For full contents and more information, visit: www.routledge.com/9781032013824

Demystifying Academic Writing

Genres, Moves, Skills, and Strategies



Zhihui Fang

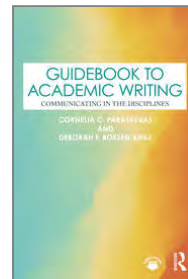
Accessible and informative, this book is designed to enhance the capacity of graduate and undergraduate students, as well as early career scholars, to write for academic purposes. Fang describes the key genres and types of academic writing, explains common rhetorical moves, offers linguistic strategies and insights to give students the skills they need for effective academic writing across genres and disciplines. Assuming no technical knowledge, this text is ideal for both non-native and native English speakers alike, and for courses in academic writing, composition, and L2 writing instruction.

Routledge
April 2021 : 286pp
Pb: 978-0-367-65354-5 : **£41.99**
Hb: 978-0-367-67508-0 : **£155**
eBook: 978-1-003-13161-8

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Guidebook to Academic Writing

Communicating in the Disciplines



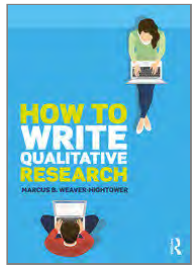
Cornelia C. Paraskevas, Deborah F. Rossen-Knill

This innovative guidebook is a concise introduction to discipline-specific academic language. Using authentic texts written by both novice and expert writers and 'translating' current, corpus-based research of academic language into a practical guide, the book gives students the tools to navigate the linguistic features of various disciplines. With exercises and additional online resources, this guidebook provides students with a range of tools they can choose from in order to create effective texts that meet discipline and reader expectations. Accessibly written, it is an essential guide for all students in humanities and sciences writing academic texts in English.

Routledge
July 2024 : 240pp
Pb: 978-1-032-48470-9 : **£39.99**
Hb: 978-1-032-48472-3 : **£155**
eBook: 978-1-003-38924-8

* For full contents and more information, visit: www.routledge.com/9781032484709

How to Write Qualitative Research



Marcus B. Weaver-Hightower University of North Dakota, USA

Qualitative research has exploded in popularity in nearly every discipline from the social sciences to health fields to business. While many qualitative textbooks explain how to conduct an interview or analyze fieldnotes, rarely do they give more than a few scant pages to the skill many find most difficult: writing. That's where *How to Write Qualitative Research* comes in. Using clear prose, helpful examples and lists, it breaks down and explains the most common writing tasks in qualitative research, and each chapter suggests step-by-step how-to approaches writers can use to tackle those tasks.

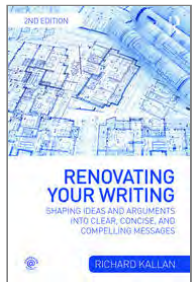
Routledge
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Pb: 978-1-138-06631-1 : **£45.99**
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2ND EDITION

Renovating Your Writing

Shaping Ideas and Arguments into Clear, Concise, and Compelling Messages



Richard Kallan

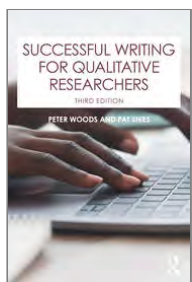
Renovating Your Writing outlines the principles of effective composition by focusing on the essential skill set and mindset every successful writer must possess. Now in its second edition, this novel text provides readers with unique strategies for crafting and revising their writing, whether for school, work, or play. The new edition emphasizes, in particular, the importance of the writer embracing a rhetorical perspective, distinguishing between formal and social media compositional styles, and appreciating the effort needed to produce clear, concise, and compelling messages.

Routledge
July 2017 : 190pp
Pb: 978-1-138-72677-2 : **£31.99**
Hb: 978-1-138-72676-5 : **£155**
eBook: 978-1-315-18660-3

* For full contents and more information, visit: www.routledge.com/9781138726772

3RD EDITION

Successful Writing for Qualitative Researchers



Peter Woods, Pat Sikes

The third edition of this text has been brought fully up to date to cover developments in funding and institutional requirements. With new material on the responsibilities of the writer, technological developments, the ability to reach wider audiences and arts-based research, this book is designed to give practical advice to aspiring and established academic writers on mind-sets, strategies, techniques and opportunities. A must-read guide for all those looking to translate their qualitative research into writing.

Routledge
March 2022 : 190pp
Pb: 978-0-367-69823-2 : **£30.99**
Hb: 978-0-367-69822-5 : **£155**
eBook: 978-1-003-14340-6

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2ND EDITION

The Essentials of Academic Writing for International Students



Stephen Bailey Taught English internationally and at the Univ of Nottingham & Derby Univ & has previously published with Routledge

Written to help international students write essays and reports for their English-language university courses, this key title covers the essentials needed to achieve academic writing success. An easy-to-follow course that builds writing confidence and can be used both in the classroom and for self-study, this second edition has been thoroughly revised and updated to contain relevant examples, explanations and exercises. All international students wanting to maximise their academic potential will find this practical, concise and easy-to-use book an invaluable guide to writing in English for their degree courses.

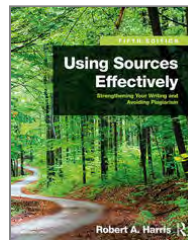
Routledge
March 2024 : 252pp
Pb: 978-1-032-72170-5 : **£23.99**
Hb: 978-1-032-72173-6 : **£155**
eBook: 978-1-032-72172-9

* For full contents and more information, visit: www.routledge.com/9781032721705

5TH EDITION

Using Sources Effectively

Strengthening Your Writing and Avoiding Plagiarism



Robert A. Harris

Now in its fifth, expanded edition, *Using Sources Effectively*, Fifth Edition targets the two most prominent problems in current research-paper writing: the increase in unintentional plagiarism and the ineffective use of research source material. Designed as a supplementary textbook for both undergraduate and graduate courses, this book will help every student who uses research in writing. Included in this edition is coverage of research strategies and source selection (Chapter 2), a chapter on quoting sources effectively (Chapter 4), and a chapter on sentence patterns (Chapter 10). APA and MLA citation styles have been updated throughout the text.

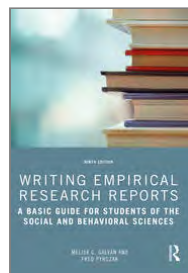
Routledge
January 2017 : 210pp
Pb: 978-1-138-28968-0 : **£60.99**
Hb: 978-1-138-28966-6 : **£185**
eBook: 978-1-315-26706-7

* For full contents and more information, visit: www.routledge.com/9781138289680

9TH EDITION

Writing Empirical Research Reports

A Basic Guide for Students of the Social and Behavioral Sciences



Melisa C. Galvan California State University, Northridge, USA

Writing Empirical Research Reports: A Basic Guide for Students of the Social and Behavioral Sciences, Ninth Edition, offers clear and practical guidance on how to write research proposals, reports, theses, and dissertations. Accompanied by online resources for students and instructors, this book is ideal for use in research methods courses, thesis/dissertation preparation courses, research seminars where writing a research report is a culminating activity, and any graduate-level seminar in which the instructor covers the vital components necessary to prepare a research manuscript for submission for publication.

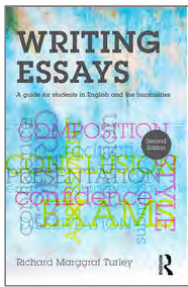
Routledge
October 2023 : 196pp
Pb: 978-1-032-13680-6 : **£59.99**
Hb: 978-1-032-13678-3 : **£145**
eBook: 978-1-003-23041-0

* For full contents and more information, visit: www.routledge.com/9781032136806

2ND EDITION

Writing Essays

A guide for students in English and the humanities



Richard Marggraf Turley Aberystwyth University, Wales.

Essays are a major form of assessment in higher education today and this is a fact that causes some writers a great deal of anxiety. Fortunately, essay writing is a skill that can be learned, like any other. Writing Essays demystifies the entire process of essay writing and reveals the tricks of the trade, making your student life easier. You'll learn how to impress tutors by discovering exactly what markers look for when they read your work. Using practical examples selected from real student assignments and tutor feedback, this book covers every aspect of composition, from introductions and conclusions, down to presentation and submission.

Routledge
November 2015 : 158pp
Pb: 978-1-138-91669-2 : **£23.99**
Hb: 978-1-138-91668-5 : **£155**
eBook: 978-1-315-68944-9

* For full contents and more information, visit: www.routledge.com/9781138916692

8TH EDITION

Writing Literature Reviews

A Guide for Students of the Social and Behavioral Sciences



Melisa C. Galvan California State University, Northridge, USA, **Jose L. Galvan** Professor Emeritus, California State University, Los Angeles.

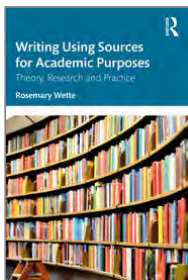
Writing Literature Reviews provides students with practical guidelines for the complex process of writing literature reviews for course projects, theses or dissertations, and research manuscripts for publication. It is ideal for use in research methods courses, thesis/dissertation preparation courses, research seminars where a literature review is expected as a culminating activity, or any course in which the instructor needs to cover the vital components necessary to prepare a literature review for a variety of audiences. The book is supported by online materials including self-test quizzes for students, and lecture slides for instructors.

Routledge
November 2024 : 288pp
Pb: 978-1-032-32868-3 : **£66.99**
Hb: 978-1-032-32862-1 : **£190**
eBook: 978-1-003-31709-8

* For full contents and more information, visit: www.routledge.com/9781032328683

Writing Using Sources for Academic Purposes

Theory, Research and Practice



Rosemary Wette

Writing Using Sources for Academic Purposes: Theory, Research and Practice provides research-based information about key components of source-based writing, and the challenges it presents for novices.

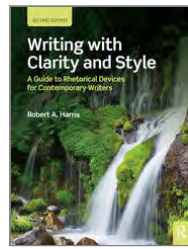
Routledge
December 2020 : 164pp
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Hb: 978-0-367-17590-0 : **£155**
eBook: 978-0-429-05751-9

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2ND EDITION

Writing with Clarity and Style

A Guide to Rhetorical Devices for Contemporary Writers



Robert A. Harris

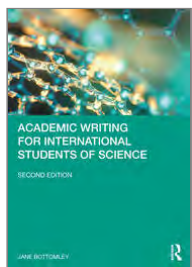
Writing with Clarity and Style, 2nd Edition, will help you to improve your writing dramatically. The book shows you how to use dozens of classical rhetorical devices to bring power, clarity, and effectiveness to your writing. You will also learn about writing styles, authorial personas, and sentence syntax as tools to make your writing interesting and persuasive. If you want to improve the appeal and persuasion of your speeches, this is also the book for you.

Routledge
December 2017 : 232pp
Pb: 978-1-138-56009-3 : **£40.99**
Hb: 978-1-138-56010-9 : **£155**
eBook: 978-0-203-71204-7

* For full contents and more information, visit: www.routledge.com/9781138560093

2ND EDITION

Academic Writing for International Students of Science



Jane Bottomley University of Manchester

This second edition is an accessible companion designed to help science and technology students develop the knowledge, skills and strategies needed to produce clear and coherent academic writing in their university assignments. Using authentic texts to explore the nature of scientific writing, the book covers key areas such as scientific style, effective sentence and paragraph structure, and coherence in texts and arguments. Throughout the book, a range of tasks offers the opportunity to put theory into practice. This is an invaluable tool for the busy science or technology student looking to improve their writing and reach their full academic potential.

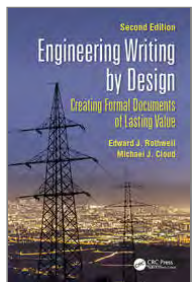
Routledge
October 2021 : 220pp
Pb: 978-0-367-63272-4 : **£30.99**
Hb: 978-0-367-63271-7 : **£155**
eBook: 978-1-003-11857-2

* For full contents and more information, visit: www.routledge.com/9780367632724

2ND EDITION

Engineering Writing by Design

Creating Formal Documents of Lasting Value, Second Edition



Edward J. Rothwell, Michael J. Cloud

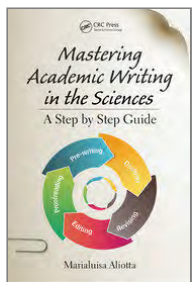
This book shows how effective writing can be achieved by thinking like an engineer. Based on the authors' combined experience as engineering educators, the book presents a novel approach to technical writing, positioning formal writing tasks as engineering design problems with requirements, constraints, protocols, standards, and customers (readers) to satisfy. Featuring illustrative examples, chapter summaries and exercises, quick-reference tables, and recommendations for further reading, this book is packed with valuable tips and information practicing and aspiring engineers need to become effective writers.

CRC Press
January 2020 : 257pp
Pb: 978-0-367-34754-3 : **£55.99**
Hb: 978-0-367-89682-9 : **£125**
eBook: 978-0-429-32769-8

* For full contents and more information, visit: www.routledge.com/9780367347543

Mastering Academic Writing in the Sciences

A Step-by-Step Guide



Marialuisa Aliotta

This book provides a comprehensive and coherent step-by-step guide to writing in scientific academic disciplines. It is an invaluable resource for those working on a PhD thesis, research paper, dissertation, or report. Writing these documents can be a long and arduous experience for students and their supervisors, and even for experienced researchers. However, this book can hold the key to success. Mapping the steps involved in the writing process - from acquiring and organizing sources of information, to revising early drafts, to proofreading the final product - it provides clear guidance on what to write and how best to write it.

CRC Press
April 2018 : 200pp
Pb: 978-1-498-70147-1 : **£52.99**
Hb: 978-1-138-74288-8 : **£140**
eBook: 978-1-351-00214-1

* For full contents and more information, visit: www.routledge.com/9781498701471

3RD EDITION

Technical Writing

A Practical Guide for Engineers, Scientists, and Nontechnical Professionals



Philip A. Laplante The Pennsylvania State University, Malvern, USA, **Chris Laplante**

Series: *What Every Engineer Should Know*

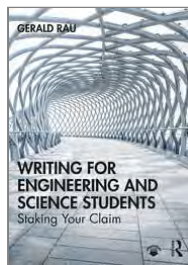
This practical text enables readers to write, edit, and publish materials of a technical nature, including books, articles, reports, and electronic media. Written by experienced practicing engineers, this guide complements traditional technical writing manuals through presentation of first-hand examples that help readers understand practical considerations in writing and producing technical content. The new edition includes new and updated exercises, examples, and case studies and includes new content on software/systems documentation, popular writing tools, and technologies such as generative AI. It is aimed at students and professionals in the science and engineering domains.

CRC Press
November 2025 : 271pp
Pb: 978-1-032-84374-2 : **£47.99**
Hb: 978-1-032-84375-9 : **£160**
eBook: 978-1-003-51243-1

* For full contents and more information, visit: www.routledge.com/9781032843742

Writing for Engineering and Science Students

Staking Your Claim



Gerald Rau

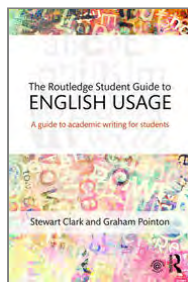
Drawing on his extensive experience of teaching international students, Gerald A. Rau provides a clear "argument structure" for students to follow when undertaking both academic and technical writing. This is the first book to make clear the different structures required for engineering versus scientific articles. Tasks and exercises are provided throughout. Using the research article as a model and covering lab reports, research proposals, dissertations, poster presentations, industry reports, emails and job applications, this book is essential reading for all students of science and engineering who are taking a course in writing, or seeking a resource to aid in their writing assignments.

Routledge
August 2019 : 324pp
Pb: 978-1-138-38825-3 : **£40.99**
Hb: 978-1-138-38824-6 : **£155**
eBook: 978-0-429-42568-4

* For full contents and more information, visit: www.routledge.com/9781138388253

The Routledge Student Guide to English Usage

A guide to academic writing for students



Stewart Clark Norwegian University of Science and Technology, **Graham Pointon**

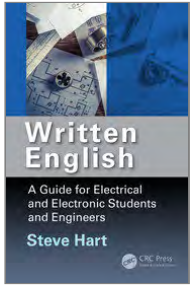
The Routledge Student Guide to English Usage is an authoritative A-Z guide to key aspects of English usage. Covering approximately 4000 carefully selected words, the authors focus on groups of confusable words that sound alike, look alike or are frequently mixed up. Examples of good usage are drawn from corpora such as the British National Corpus and the Corpus of Contemporary American English. A substantial reference section is also provided with stylistic guidance on academic writing skills, email standards, punctuation and grammar tips. This is the essential reference text for all students working on improving their academic writing skills.

Routledge
May 2016 : 402pp
Pb: 978-1-138-93359-0 : **£41.99**
Hb: 978-1-138-93358-3 : **£155**
eBook: 978-1-315-67843-6

* For full contents and more information, visit: www.routledge.com/9781138933590

Written English

A Guide for Electrical and Electronic Students and Engineers



Steve Hart English Language Editor and Resource Writer, Cambridge, UK

This book covers all aspects of English grammar relevant to electrical and electronic engineers. It discusses working with numbers and algebra, including correct formatting procedures (both body citations and references). The book addresses vocabulary and stylistic issues, describes the level of writing expected in the field, reveals often-made mistakes, and indicates areas where engineers should focus their efforts. The text also offers unique insight into problems students and academics face on a day-to-day basis when writing in a language that is not their mother tongue.

CRC Press

December 2015 : 216pp

Pb: 978-1-498-73962-7 : £41.99

Hb: 978-1-138-42241-4 : £200

eBook: 978-1-315-21412-2

* For full contents and more information, visit: www.routledge.com/9781498739627

50 Things to Think About When Writing a Thesis

Paving Your Own Path to Submission



Donna Starks University of Auckland, New Zealand,
Margaret J. Robertson La Trobe University, Australia

This book shows thesis writers how to embrace the individual nature of writing, bringing their own unique identities and skillsets to their thesis. Each idea is presented as one that has multiple solutions depending on who the readers are and what they want to achieve. The book guides the reader on identifying their own ways of working, their own particular strengths, as well as their unique voice and how to use these as tools to navigate the process of writing and surviving the thesis. It also provides practical guidance on elements such as the literature review and methodology, considerations around language and how to deal with life after submission.

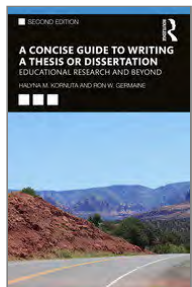
Routledge
August 2023 : 136pp
Pb: 978-1-032-34699-1 : **£28.99**
Hb: 978-1-032-34700-4 : **£145**
eBook: 978-1-003-32340-2

* For full contents and more information, visit: www.routledge.com/9781032346991

2ND EDITION

A Concise Guide to Writing a Thesis or Dissertation

Educational Research and Beyond



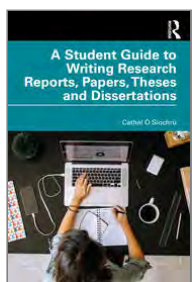
Halyna M. Kornuta, **Ron W. Germaine**

A Concise Guide to Writing a Thesis or Dissertation provides clear, concise, and intentional practice guidelines about organizing and writing a thesis or dissertation. Part I provides an overview for writing a thesis or dissertation. It describes the big picture of planning and formatting a research study, from identifying a topic through to writing quality. Part II describes the framework and substance of a research study. It models the pattern generally found in a formal, five-chapter research study.

Routledge
May 2019 : 134pp
Pb: 978-0-367-17458-3 : **£19.99**
Hb: 978-0-367-17457-6 : **£140**
eBook: 978-0-429-05688-8

* For full contents and more information, visit: www.routledge.com/9780367174583

A Student Guide to Writing Research Reports, Papers, Theses and Dissertations



Cathal Ó Siochrú

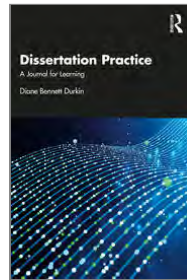
This useful guide for students combines all the guidance, advice, and key tips needed to write successful research reports, theses, or dissertations, exploring, in detail, each of the elements involved in writing an academic paper. The book will guide you through all the key sections of a report including the Introduction, Literature Review, Method, Results, Discussion and more.

Routledge
November 2022 : 234pp
Pb: 978-0-367-62104-9 : **£23.99**
Hb: 978-0-367-62103-2 : **£140**
eBook: 978-1-003-10796-5

* For full contents and more information, visit: www.routledge.com/9780367621049

Dissertation Practice

A Journal for Learning



Diane Bennett Durkin

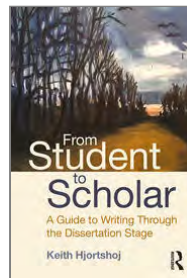
Dissertation Practice: A Journal for Learning is an interactive resource that promotes journaling to engender key dissertation practices, through activities and exercises. It is rooted in the view that students can use journaling to promote thought, and that the privacy of journal entries ensures comfort and familiarity. This personal context, along with the book's open prompts, allows students to engage in extended and alternative thinking. This is an essential resource for students in Ph.D and Ed.D programs in the social sciences and education who are using qualitative, quantitative, and mixed methods.

Routledge
October 2024 : 198pp
Pb: 978-1-032-85800-5 : **£26.99**
Hb: 978-1-032-85804-3 : **£145**
eBook: 978-1-003-51990-4

* For full contents and more information, visit: www.routledge.com/9781032858005

From Student to Scholar

A Guide to Writing Through the Dissertation Stage



Keith Hjortshoj John S. Knight Writing Program, Cornell University

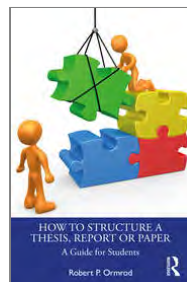
From Student to Scholar guides graduate students through the "hidden" developmental transition required in writing a dissertation and moving beyond, to become a successful scholar. Identifying common rhetorical challenges across disciplines, author Hjortshoj explains how to accommodate evolving audiences, motivations, standards, writing processes, and timelines. One full chapter is devoted to "writing blocks," and another offers advice to international students who are non-native speakers of English. The text also offers advice for managing relations with advisors and preparing for the diverse careers that PhDs, trained primarily as research specialists, actually enter.

Routledge
August 2018 : 204pp
Pb: 978-1-138-56944-7 : **£51.99**
Hb: 978-1-138-56942-3 : **£155**
eBook: 978-0-203-70426-4

* For full contents and more information, visit: www.routledge.com/9781138569447

How to Structure a Thesis, Report or Paper

A Guide for Students



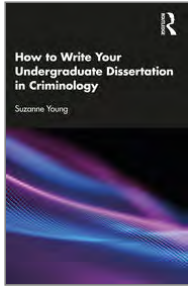
Robert P. Ormrod

This book provides concise practical guidance for students to help make their student's writing process more structured for their group work or thesis at any level. It therefore shows how to demonstrate meaningfully what they have learned in the relevant course or degree programme in a way that is accessible to the supervisor and the examiner. Suitable for students completing theses at Bachelors and Masters level, as well as other types of report-based work, and for supervisors looking for a clear and practical guide to help students with their writing process. The book will also provide a bridge to writing papers for journals in an academic career.

Routledge
November 2022 : 130pp
Pb: 978-1-032-36946-4 : **£19.99**
Hb: 978-1-032-36948-8 : **£140**
eBook: 978-1-003-33463-7

* For full contents and more information, visit: www.routledge.com/9781032369464

How to Write Your Undergraduate Dissertation in Criminology



Suzanne Young

This book provides a guide for undergraduate criminology and criminal justice students undertaking their final year dissertation. Drawing on empirical case studies and including a range of resources and templates, this book takes students through each stage of the dissertation and offers useful guidance on structure and content.

Routledge
April 2022 : 146pp
Pb: 978-0-367-85999-2 : **£25.99**
Hb: 978-0-367-85998-5 : **£155**
eBook: 978-1-003-01633-5

* For full contents and more information, visit: www.routledge.com/9780367859992

Principles and Concepts of Social Research

A Critical Examination of Methodology, Methods and Analysis for Emerging Researchers



Simon Hayhoe

This text covers the foundations of social science research, outlining the history and core elements of Western social research, along with a variety of topics, ranging from the history of scientific beliefs from Ancient Greece to the contemporary world. This book will be of use to core research units and training programs that universities provide at postgraduate level, at doctoral level and for early career post-doctoral researchers, to develop greater understanding of issues surrounding research. In addition to its theory, the contents of the book will include questions for discussion in seminars and small group work.

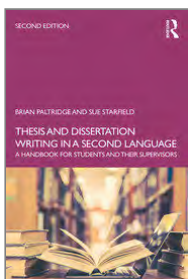
Routledge
December 2022 : 200pp
Pb: 978-1-032-14967-7 : **£37.99**
Hb: 978-1-032-14966-0 : **£140**
eBook: 978-1-003-24199-7

* For full contents and more information, visit: www.routledge.com/9781032149677

2ND EDITION

Thesis and Dissertation Writing in a Second Language

A Handbook for Students and their Supervisors



Brian Paltridge , Sue Starfield

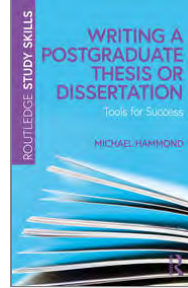
This fully updated edition is the guide for non-native speakers writing a thesis or dissertation in English. It explicitly unpacks academic writing, using accessible language and practical examples and discusses the issues that are crucial to success. These include: understanding the setting and purpose, understanding writer/reader relationships, issues of writer identity and what examiners really value. Suitable for students from all disciplines writing in a second language this book is equally valuable for supervisors of non-native speakers as it provides tasks that can be used with students to guide them in their writing.

Routledge
August 2019 : 248pp
Pb: 978-1-138-04870-6 : **£31.99**
Hb: 978-1-138-04869-0 : **£140**
eBook: 978-1-315-17002-2

* For full contents and more information, visit: www.routledge.com/9781138048706

Writing a Postgraduate Thesis or Dissertation

Tools for Success



Michael Hammond

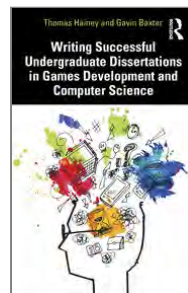
Series: *Routledge Study Skills*

Writing a Postgraduate Dissertation or Thesis discusses the challenges that students encounter in their writing and provides thoughtful advice on how to address those challenges. It provides key advice on how to write about a field of research, the tradition of methodology and methods undertaken, and the contribution to knowledge that is being made.

Routledge
July 2022 : 172pp
Pb: 978-0-367-75282-8 : **£20.99**
Hb: 978-0-367-75281-1 : **£155**
eBook: 978-1-003-16182-0

* For full contents and more information, visit: www.routledge.com/9780367752828

Writing Successful Undergraduate Dissertations in Games Development and Computer Science



Thomas Hainey School of Computing, Engineering and Physical Sciences, University of the West of Scotland,
Gavin Baxter

Writing a dissertation in the final year at university can be a daunting task, but particularly if the degree is practically oriented and implementation-based. This book provides a concise guide to producing a dissertation in Computer Science, Software Engineering or Games Development degrees with research projects typically involving design, implementation, testing and evaluation. Drawing on the authors' knowledge and experience of supervising dissertation students, the book offers a step-by-step guide to the key areas of writing a dissertation alongside real-life examples.

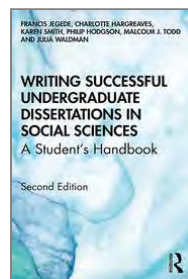
Routledge
November 2022 : 304pp
Pb: 978-0-367-51708-3 : **£23.99**
Hb: 978-0-367-51707-6 : **£140**
eBook: 978-1-003-05488-7

* For full contents and more information, visit: www.routledge.com/9780367517083

2ND EDITION

Writing Successful Undergraduate Dissertations in Social Sciences

A Student's Handbook



Francis Jegede , Charlotte Hargreaves , Karen Smith , Philip Hodgson , Malcolm Todd , Julia Waldman

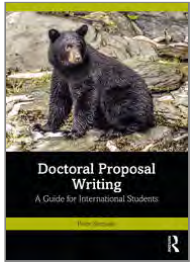
A practical guide for students undertaking their dissertation, this book uses real examples of dissertations across the Social Sciences. Providing an accessible overview of the essential steps in conducting research and writing dissertations, each chapter has clear learning outcomes and research objectives with relevant themes. Using a mixture of useful information, exercises, practical strategies, case study material and further reading, it gives hints and tips on beginning and managing a research project and working with supervisors. Packed with proven practical advice it is a dependable starting point and guide throughout the dissertation journey.

Routledge
February 2020 : 240pp
Pb: 978-0-367-25525-1 : **£25.99**
Hb: 978-0-367-25523-7 : **£155**
eBook: 978-0-429-28825-8

* For full contents and more information, visit: www.routledge.com/9780367255251

Doctoral Proposal Writing

A Guide for International Students



Peter Samuels Uni of Wolverhampton Busnss Schl

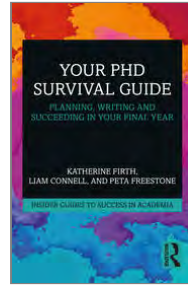
This book is an essential guide for current and prospective international doctoral students wishing to apply and study for a PhD in the UK, and other countries where courses are conducted in English. The book supports students in choosing a suitable research topic and writing an effective proposal for investigating this topic across a range of forms of doctoral research, across several disciplines, with an emphasis on international students and students with English as an additional language.

Routledge
October 2024 : 138pp
Pb: 978-1-032-56193-6 : **£28.99**
Hb: 978-1-032-56192-9 : **£155**
eBook: 978-1-003-43434-4

* For full contents and more information, visit: www.routledge.com/9781032561936

Your PhD Survival Guide

Planning, Writing, and Succeeding in Your Final Year



Katherine Firth University of Melbourne, Australia, **Liam Connell**, **Peta Freestone**

Series: *Insider Guides to Success in Academia*

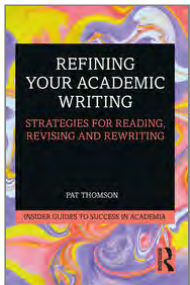
Accessible, insightful and a must-have toolkit for all doctoral students, the founders of the 'Thesis Boot Camp' intensive writing programme show how to survive and thrive through the challenging final year of writing and submitting a thesis. Drawing on an understanding of the intellectual, professional, practical and personal elements of the doctorate to help readers gain insight into what it means to finish a PhD and how to get there, this book covers common challenges and ways to resolve them. Written for students in all disciplines, and relevant to university systems around the world, this unique book expertly guides students through the final 6–12 months of the thesis.

Routledge
December 2020 : 222pp
Pb: 978-0-367-36184-6 : **£23.99**
Hb: 978-0-367-36183-9 : **£155**
eBook: 978-0-429-34439-8

* For full contents and more information, visit: www.routledge.com/9780367361846

Refining Your Academic Writing

Strategies for Reading, Revising and Rewriting



Pat Thomson

Series: *Insider Guides to Success in Academia*

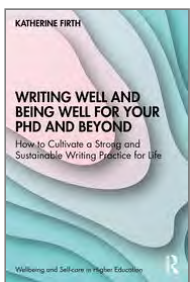
This book will help you complete your writing project and provides a reading, revising, and rewriting repertoire that you can adapt and add to. It offers ways to think about revision and a basic tool kit which will help you to identify what needs your attention and why. This accessible book draws on and extends some of the most heavily used posts on Thomson's popular academic writing blog Patter, as well as tried and tested writing workshops. Written with a light touch, this is ideal reading for doctoral and early career researchers, this book provides strategies needed to support the writing revision process.

Routledge
December 2022 : 236pp
Pb: 978-0-367-46876-7 : **£20.99**
Hb: 978-0-367-46875-0 : **£140**
eBook: 978-1-003-03168-0

* For full contents and more information, visit: www.routledge.com/9780367468767

Writing Well and Being Well for Your PhD and Beyond

How to Cultivate a Strong and Sustainable Writing Practice for Life



Katherine Firth University of Melbourne, Australia

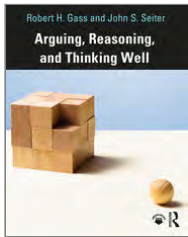
Series: *Wellbeing and Self-care in Higher Education*

Prioritising wellbeing alongside academic development, this book provides practical advice to help students write well, and be well, during their PhD and throughout their career. Relevant at any stage of the writing process, this book will help doctoral students and early career researchers to produce great words that people want to read, examiners want to pass and editors want to publish.

Routledge
September 2023 : 200pp
Pb: 978-1-032-31081-7 : **£23.99**
Hb: 978-1-032-31082-4 : **£145**
eBook: 978-1-003-30794-5

* For full contents and more information, visit: www.routledge.com/9781032310817

Arguing, Reasoning, and Thinking Well



Robert Gass, John Seiter

Arguing, Reasoning, and Thinking Well offers an engaging and accessible introduction to argumentation and critical thinking. Authors Gass and Seiter, renowned for their friendly writing style, include real-world examples, hypothetical dialogues, and editorial cartoons to invite readers in. The text includes a full chapter devoted to the ethics of argument, as well as content on refutation and formal logic. It is designed for students in argumentation and critical thinking courses in communication, philosophy, and psychology departments, and is suitable for students and general education courses across the curriculum.

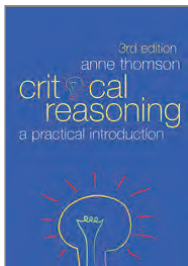
Routledge
June 2019 : 280pp
Pb: 978-0-815-37433-6 : **£86.99**
Hb: 978-0-815-37432-9 : **£175**
eBook: 978-1-351-24249-3

* For full contents and more information, visit: www.routledge.com/9780815374336

3RD EDITION

Critical Reasoning

A Practical Introduction



Anne Thomson

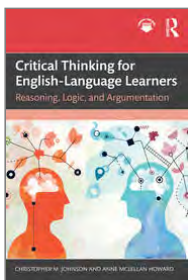
We all engage in the process of reasoning, but we don't always pay attention to whether we are doing it well. This book offers the opportunity to practise reasoning in a clear-headed and critical way, with the aims of developing an awareness of the importance of reasoning well and of improving the reader's skill in analyzing and evaluating arguments. Anne Thomson has updated and revised the book to include fresh and topical examples, and new chapters on evaluating the credibility of evidence and decision making and dilemmas. By the end of the book students should be able to identify flaws in arguments, analyze the reasoning in newspaper articles, books and speeches, assess the credibility of evidence and authorities and approach any topic with the ability to reason and think critically.

Routledge
September 2008 : 256pp
Pb: 978-0-415-44587-0 : **£40.99**
Hb: 978-0-415-44586-3 : **£155**
eBook: 978-0-203-87099-0

* For full contents and more information, visit: www.routledge.com/9780415445870

Critical Thinking for English-Language Learners

Reasoning, Logic, and Argumentation



Christopher M. Johnson, Anne McLellan Howard

Critical Thinking for English-Language Learners is an accessible introduction to critical thinking and the use of informal logic for learners of English. Critical thinking skills are key to helping students learn how to reason in English. By developing informal logic skills, students can develop their critical thinking abilities to better assess why different types of arguments are successful or unsuccessful. Providing students with key skills to make and critique arguments in English, this book is a key resource for beginning and intermediate learners of English studying Critical Thinking, English for Academic Purposes, and Introduction to Philosophy.

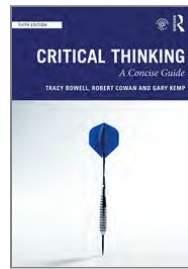
Routledge
February 2025 : 248pp
Pb: 978-1-032-75247-1 : **£41.99**
Hb: 978-1-032-75248-8 : **£155**
eBook: 978-1-003-47307-7

* For full contents and more information, visit: www.routledge.com/9781032752471

5TH EDITION

Critical Thinking

A Concise Guide



Tracy Bowell, Robert Cowan, Gary Kemp University of Glasgow, UK

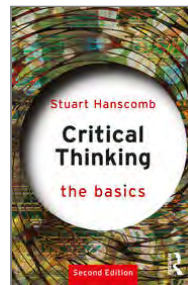
We are frequently confronted with arguments. Critical Thinking equips students with the concepts and techniques used in the analysis and assessment of arguments whatever the context. Through precise and accessible discussion, this book provides the tools to become a successful critical thinker, who can act and believe in accordance with good reasons, and who can articulate and make explicit those reasons. This fifth edition has been revised and updated throughout, including an expanded range of 'complete examples', the introduction of Venn diagrams, and the discussion of fake news and related phenomena arising in the contemporary scene.

Routledge
August 2019 : 348pp
Pb: 978-0-815-37143-4 : **£39.99**
Hb: 978-0-815-37142-7 : **£155**
eBook: 978-1-351-24373-5

* For full contents and more information, visit: www.routledge.com/9780815371434

2ND EDITION

Critical Thinking: The Basics



Stuart Hanscomb University of Glasgow, UK

Series: *The Basics*

An accessible and engaging introduction to the field of critical thinking, drawing on philosophy, communication and psychology. This 2nd edition has been revised and updated throughout and includes a new chapter on emotion and argument and how to build persuasive arguments. There are also many fresh examples, including conspiracy theories, trust, leadership and cultural cognition. With updated discussion questions/exercises and suggestions for further reading, this book is an essential read for students approaching the field of critical thinking for the first time, and for the general reader wanting to improve their thinking skills.

Routledge
June 2023 : 286pp
Pb: 978-1-032-16299-7 : **£20.99**
Hb: 978-1-032-16301-7 : **£145**
eBook: 978-1-003-24794-4

* For full contents and more information, visit: www.routledge.com/9781032162997

2ND EDITION

Recipes for Science

An Introduction to Scientific Methods and Reasoning



Angela Potochnik, Matteo Colombo, Cory Wright Tilburg University, The Netherlands

Today, scientific literacy is an essential aspect of any undergraduate education. Recipes for Science responds to this need by providing an accessible introduction to the nature of science and scientific methods, reasoning, and concepts

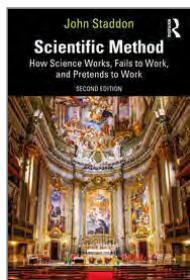
Routledge
April 2024 : 378pp
Pb: 978-1-032-29096-6 : **£45.99**
Hb: 978-1-032-29097-3 : **£185**
eBook: 978-1-003-30000-7

* For full contents and more information, visit: www.routledge.com/9781032290966

2ND EDITION

Scientific Method

How Science Works, Fails to Work, and Pretends to Work



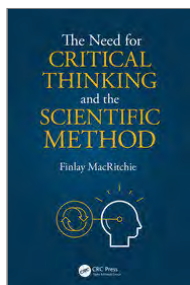
John Staddon Duke University, USA

This expanded second edition of *Scientific Method* shows how science works, fails to work, or pretends to work, by looking at examples from physics, biomedicine, psychology, sociology, and economics. *Scientific Method* is essential reading for students and professionals trying to make sense of the role of science in society, and of the meaning, value, and limitations of scientific methodology.

Routledge
June 2024 : 226pp
Pb: 978-1-032-65771-4 : **£33.99**
Hb: 978-1-032-68389-8 : **£155**
eBook: 978-1-032-68387-4

* For full contents and more information, visit: www.routledge.com/9781032657714

The Need for Critical Thinking and the Scientific Method



Finlay MacRitchie Kansas State University, Manhattan, USA

The book exposes many of the misunderstandings about the scientific method and its application to critical thinking. It argues for a better understanding of the scientific method and for nurturing critical thinking in the community. This knowledge helps the reader to analyze issues more objectively, and warns about the dangers of bias and propaganda. The principles are illustrated by considering several issues that are currently being debated. These include anthropogenic global warming (often loosely referred to as climate change), dangers to preservation of the Great Barrier Reef, and the expansion of the gluten-free food market and genetic engineering.

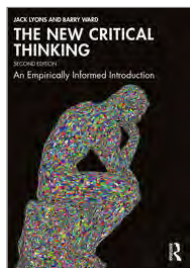
CRC Press
May 2018 : 152pp
Pb: 978-0-815-36775-8 : **£48.99**
Hb: 978-0-815-36815-1 : **£160**
eBook: 978-1-351-25587-5

* For full contents and more information, visit: www.routledge.com/9780815367758

2ND EDITION

The New Critical Thinking

An Empirically Informed Introduction



Jack Lyons, Barry Ward

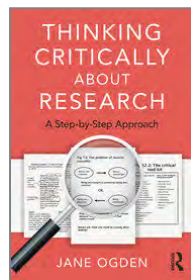
This highly innovative text aims to improve real-world critical thinking, incorporating insights from epistemology and philosophy of science to formulate best practices for assessing information sources and circumnavigate our natural intellectual blind spots. The book covers introductory logic in a way that emphasizes practical application, rather than formal completeness. This new edition provides ample resources and exercises for students and instructors alike both in-text and online.

Routledge
May 2024 : 412pp
Pb: 978-1-032-31728-1 : **£73.99**
Hb: 978-1-032-31730-4 : **£155**
eBook: 978-1-003-31102-7

* For full contents and more information, visit: www.routledge.com/9781032317281

Thinking Critically about Research

A Step by Step Approach



Jane Ogden

This book is designed to help readers develop a critical understanding of evidence and the ways in which evidence is presented, and to challenge the information they receive in both academic and non-academic sources. The author presents a step by step approach with a focus on knowing methods, culminating in a bespoke 'critical tool kit' which offers a practical checklist designed to be used when carrying out research. There are also learning features including tasks and worked examples, drawing on real research studies. This is an essential resource for students and researchers, and those putting research into practice, who want to have better critical thinking skills.

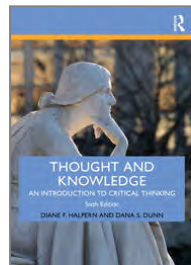
Routledge
December 2018 : 176pp
Pb: 978-0-367-00020-2 : **£40.99**
Hb: 978-0-367-00019-6 : **£155**
eBook: 978-0-429-44496-8

* For full contents and more information, visit: www.routledge.com/9780367000202

6TH EDITION

Thought and Knowledge

An Introduction to Critical Thinking



Diane F. Halpern Claremont McKenna College, USA,
Dana S. Dunn Moravian College, USA

Thought and Knowledge applies theory and research from the learning sciences to teach students the critical thinking skills that they need to succeed in today's world. The text is grounded in psychological science and brought to life through humorous and engaging language and numerous practical and real-world examples and anecdotes. Critical thinking skills are presented in every chapter, empowering students to learn more efficiently, research more productively, and present logical, critical, and informed arguments. The skills are reviewed at the end of the chapter, and a complete list of skills with definitions and examples are included in the appendix.

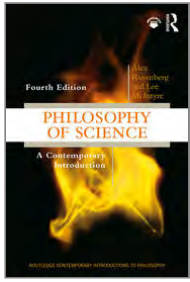
Routledge
October 2022 : 428pp
Pb: 978-1-138-65517-1 : **£69.99**
Hb: 978-1-138-65516-4 : **£220**
eBook: 978-1-032-32316-9 : **£61.99**

* For full contents and more information, visit: www.routledge.com/9781138655171

4TH EDITION

Philosophy of Science

A Contemporary Introduction

**Alex Rosenberg, Lee McIntyre***Series: Routledge Contemporary Introductions to Philosophy*

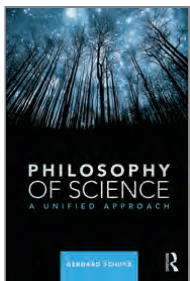
Any serious student attempting to better understand the nature, methods, and justification of science will value this book. Weaving lucid explanations with clear analyses, the volume is as a much-used, thematically-oriented introduction to the field. The new edition has been thoroughly rewritten based on instructor and student feedback, to improve readability and accessibility, without sacrificing depth. It retains all of the logically structured, extensive coverage of earlier editions, which the journal Teaching Philosophy called, "the industry standard" and "essential reading" in a 2010 review.

Routledge
November 2019 : 308pp
Pb: 978-1-138-33151-8 : **£49.99**
Hb: 978-1-138-33148-8 : **£155**
eBook: 978-0-429-44726-6

* For full contents and more information, visit: www.routledge.com/9781138331518

Philosophy of Science

A Unified Approach

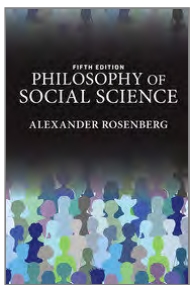
**Gerhard Schurz** Dusseldorf University, Germany,
Gerhard Schurz

Philosophy of Science: A Unified Approach combines an elementary introduction to philosophy of science with an integrated survey of all of its important subfields. Focusing on the methodological unity of the sciences, the book provides chapters with introductory sections, followed by complementary, advanced topics. By restricting the teaching materials to the introductory sections, one obtains the basis for a semester-long course. Covering all of the material contained in the book fills a year-long course.

Routledge
November 2013 : 480pp
Pb: 978-0-415-82936-6 : **£52.99**
Hb: 978-0-415-82934-2 : **£155**
eBook: 978-0-203-36627-1

* For full contents and more information, visit: www.routledge.com/9780415829366

5TH EDITION

Philosophy of Social Science**Alexander Rosenberg**

Philosophy of Social Science provides a tightly argued yet accessible introduction to the philosophical foundations of the human sciences, including economics, anthropology, sociology, political science, psychology, history, and the disciplines emerging at the intersections of these subjects with biology. Philosophy is unavoidable for social scientists because the choices they make in answering questions in their disciplines force them to take sides on philosophical matters. Conversely, the philosophy of social science is equally necessary for philosophers since the social and behavior sciences must inform their understanding of human action, norms, and social institutions.

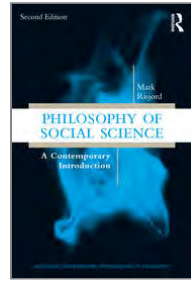
Routledge
July 2015 : 360pp
Pb: 978-0-813-34973-2 : **£49.99**
Hb: 978-0-367-09807-0 : **£155**
eBook: 978-0-429-49484-0

* For full contents and more information, visit: www.routledge.com/9780813349732

2ND EDITION

Philosophy of Social Science

A Contemporary Introduction

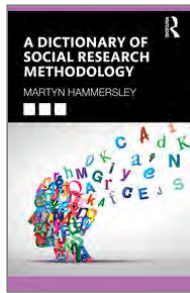
**Mark Risjord** Emory University, USA*Series: Routledge Contemporary Introductions to Philosophy*

This accessible text offers a comprehensive overview of debates in the field, with special attention to new research programs. Topics include the relationship of social policy to social science, interpretive research, cognitive and evolutionary explanations, intentional action explanation, rational choice theory, conventions and social norms, joint intentionality, causal inference, and experimentation. The Second Edition provides updates with the most recent literature and adds two new chapters: one on modeling and one on the role of race and gender in the social sciences.

Routledge
July 2022 : 336pp
Pb: 978-1-032-07586-0 : **£45.99**
Hb: 978-1-032-07587-7 : **£200**
eBook: 978-1-003-20779-5

* For full contents and more information, visit: www.routledge.com/9781032075860

A Dictionary of Social Research Methodology



Martyn Hammersley The Open University, UK

This accessible book offers a detailed guide to a wide range of methodological concepts, both those of a more philosophical kind and those that are more technical in character: from constructionism to critical realism, regression analysis to grounded theory, odds ratios to triangulation. Providing clear definitions for a wide range of methodological concepts from across the social sciences, this is an essential resource for all who have an interest in social research methodology.

Routledge
September 2024 : 180pp
Pb: 978-1-032-82213-6 : **£39.99**
Hb: 978-1-032-82215-0 : **£155**
eBook: 978-1-003-50350-7

* For full contents and more information, visit: www.routledge.com/9781032822136

Are You Making a Meal Out of Research?

A Recipe for Research Success



Steve Reay, Cassie Khoo, Gareth Terry, Guy Collier, Trent Dallas, Valance Smith

Research methods in a comic! This visual guide to common research methods paradigms will get you started on thinking about your research journey - what research is and understanding different types of methods, how you choose them, and how you get started. The book includes several worksheets to start making your own research menu and further reading to learn more. Suitable for upper level undergraduate and first level postgraduate students in the social and behavioural sciences, healthcare, and those interested in indigenous and Māori research methods.

Routledge
May 2023 : 72pp
Pb: 978-1-032-39232-5 : **£16.99**
Hb: 978-1-032-39230-1 : **£145**
eBook: 978-1-003-34892-4

* For full contents and more information, visit: www.routledge.com/9781032392325

A-Z of Digital Research Methods



Catherine Dawson

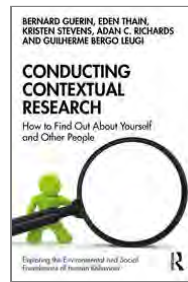
This book provides a quick and easy, alphabetical reference guide for any student or researcher looking for an introduction to digital research methods. It provides a pathway through the often confusing digital research landscape, giving a concise introduction to each method.

Routledge
July 2019 : 424pp
Pb: 978-1-138-48680-5 : **£29.99**
Hb: 978-1-138-48679-9 : **£140**
eBook: 978-1-351-04467-7

* For full contents and more information, visit: www.routledge.com/9781138486805

Conducting Contextual Research

How to Find Out About Yourself and Other People



Bernard Guerin University of South Australia, Australia,
Eden Thain, Kristen Stevens, Adan C. Richards, Guilherme Bergo Leugi

Series: Exploring the Environmental and Social Foundations of Human Behaviour

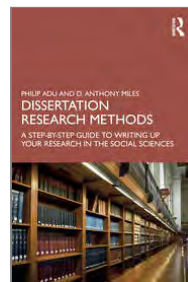
This innovative book proposes an entirely new approach to social research, presenting practical ways to discover people's life contexts in order to understand why they do what they do, which is essential for any forms of research that need to understand people. Conducting Contextual Research is essential reading for postgraduate students and professionals in the fields of counselling, psychology and social work, and will be useful to anyone conducting research or inquiries to understand human behaviour, including academic researchers, detectives, intelligence operators, social workers, government service researchers, social policy analysts, and biographers.

Routledge
June 2024 : 190pp
Pb: 978-1-032-60818-1 : **£46.99**
Hb: 978-1-032-60825-9 : **£145**
eBook: 978-1-003-46063-3

* For full contents and more information, visit: www.routledge.com/9781032608181

Dissertation Research Methods

A Step-by-Step Guide to Writing Up Your Research in the Social Sciences



Philip Adu The National Centre for Academic and Dissertation Excellence, The Chicago School of Professional Psychology, USA, **D. Anthony Miles**

Dissertation Research Methods: A Step-by-Step Guide to Writing Up Your Research in the Social Sciences focuses specifically on methodology when planning, writing and submitting your dissertation thesis. Written by two methodology experts in the social sciences, the book provides a step-by-step guide through each stage of the dissertation process. This compact book will be of use to all graduate students and their supervisors in the Social Sciences, Education and Behavioural Sciences, looking for a guide for working with robust and defensible methodological principles in their dissertation research and theses.

Routledge
September 2023 : 470pp
Pb: 978-1-032-21385-9 : **£45.99**
Hb: 978-1-032-21383-5 : **£155**
eBook: 978-1-003-26815-4

* For full contents and more information, visit: www.routledge.com/9781032213859

Doing Academic Research

A Practical Guide to Research Methods and Analysis



Ted Gournelos

Doing Academic Research is a concise, accessible, and tightly organized overview of the research process in the humanities, social sciences, and business. Rather than a book about research, this is a practical guide to doing research, and guides budding researchers along the process of developing an effective workflow, where to go for help, and how to actually complete the project. It addresses diversity in abilities, interest, discipline, and ways of knowing by focusing not just on the process of conducting any one method in detail, but also the ways in which someone might choose a research method and conduct it successfully.

Routledge
May 2019 : 208pp
Pb: 978-0-367-20793-9 : **£19.99**
Hb: 978-0-367-20791-5 : **£140**
eBook: 978-0-429-26355-2

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Literature Review and Research Design

A Guide to Effective Research Practice



Dave Harris

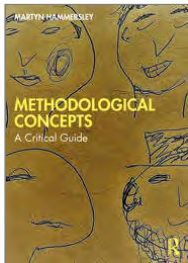
Graduate students executing their first independent research project often struggle to use academic literature effectively in the process of designing, developing, executing, and presenting their work. This book gives an overview of how to develop an effective research practice supported by the academic literature. Particularly suitable for those pursuing professional doctorates in subjects such as education and psychology.

Routledge
December 2019 : 176pp
Pb: 978-0-367-25037-9 : **£29.99**
Hb: 978-0-367-25036-2 : **£140**
eBook: 978-0-429-28566-0

* For full contents and more information, visit: www.routledge.com/9780367250379

Methodological Concepts

A Critical Guide



Martyn Hammersley The Open University, UK

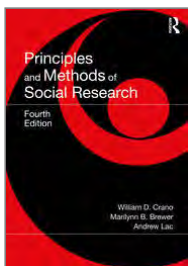
Methodological Concepts: A Critical Guide clarifies many key terms and issues in social research methodology. It outlines the conventional meanings of these terms, but also addresses their contentious character. The aim is to offer interpretations of them that provide a coherent conception of the nature of social science.

Routledge
February 2023 : 186pp
Pb: 978-1-032-39574-6 : **£36.99**
Hb: 978-1-032-39573-9 : **£140**
eBook: 978-1-003-35035-4

* For full contents and more information, visit: www.routledge.com/9781032395746

4TH EDITION

Principles and Methods of Social Research



William D. Crano Claremont Graduate University, USA, **Marilyn B. Brewer** Ohio State University, USA, **Andrew Lac** Claremont Graduate University, USA

Through a multi-methodology approach, Principles and Methods of Social Research, Fourth Edition covers the latest research techniques and designs and guides readers toward the design and conduct of social research from the ground up. Applauded for its comprehensive coverage, the breadth and depth of content of this new edition is unparalleled. It is intended for graduate or advanced undergraduate courses in research methods in psychology, communication, sociology, education, public health, and marketing, and further appeals to researchers in various fields of social research, such as social psychology and communication.

Routledge
July 2023 : 486pp
Pb: 978-1-032-22240-0 : **£94.99**
Hb: 978-1-032-22241-7 : **£155**
eBook: 978-1-003-27173-4

* For full contents and more information, visit: www.routledge.com/9781032222400

5TH EDITION

Principles of Research in Behavioral Science



Mary E. Kite, **Bernard E. Whitley, Jr** Ball State University, USA

Now in its fifth edition, this invaluable textbook provides a comprehensive overview of research methods in the behavioral sciences, emphasizing the conceptual challenges inherent in scientific inquiry. Organized to mirror each stage of the research process, this text guides readers through the process, from formulating questions, to collecting data, to interpreting results. Ideal for advanced undergraduate, graduate, and post-graduate students seeking a strong foundation in research methods, it also serves as a valuable reference for seasoned researchers looking to refresh their knowledge.

Routledge
July 2025 : 806pp
Hb: 978-1-032-72058-6 : **£130**
IEPB: 978-1-032-72059-3 : **£45.99**
eBook: 978-1-032-72060-9

* For full contents and more information, visit: www.routledge.com/9781032720586

2ND EDITION

Research Design, Second Edition

Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches



Patricia Leavy

With a new chapter on the literature review, this accessible step-by-step guide to using the five major approaches to research design is now in a thoroughly revised second edition. The prior edition's user-friendly features are augmented by a new companion website with worksheets keyed to each chapter. For each approach, the text presents a template for a research proposal and explains how to conceptualize and fill in every section. Interdisciplinary research examples draw on current events and social justice issues. PowerPoints and chapter tests with answer keys are available to instructors using the book in a course.

Guilford Press
January 2023 : 323pp
Pb: 978-1-462-54897-2 : **£45.99**
Hb: 978-1-462-55088-3 : **£69.99**

* For full contents and more information, visit: www.routledge.com/9781462548972

2ND EDITION

Research Methods

The Key Concepts



Michael Hammond University of Warwick, UK, **Jerry Wellington**

Series: *Routledge Key Guides*

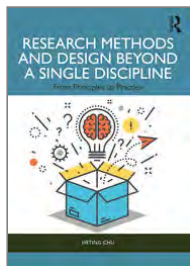
This invaluable resource provides a comprehensive overview of the many methods and methodologies of social research. Each entry provides a critical definition and examines the value and difficulties of a particular method or methodology of concept across different fields of social research. With thematic further reading stretching across the social sciences, this second edition will help readers develop a firm understanding of the rationale and principles behind key research methods, and is a must-have for new researchers at all levels, from undergraduate to postgraduate and beyond.

Routledge
September 2020 : 232pp
Pb: 978-0-367-17874-1 : **£23.99**
Hb: 978-0-367-17873-4 : **£115**
eBook: 978-0-429-05816-5

* For full contents and more information, visit: www.routledge.com/9780367178741

Research Methods and Design Beyond a Single Discipline

From Principles to Practice



Heting Chu

This book presents and discusses 15 research methods after an overview of each, an illustration of the research process and an examination of related topics. The focus of this book is on data collection techniques and research design. This book is essential for masters and doctoral students, and researchers who wish to learn about research methods and design comprehensively and systematically, as well as instructors delivering research methods courses across the social and behavioral sciences.

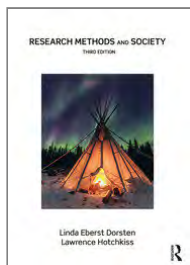
Routledge
April 2024 : 360pp
Pb: 978-0-367-89885-4 : **£61.99**
Hb: 978-0-367-89883-0 : **£155**
eBook: 978-1-003-02171-1

* For full contents and more information, visit: www.routledge.com/9780367898854

3RD EDITION

Research Methods and Society

Foundations of Social Inquiry



Linda Eberst Dorsten , Lawrence Hotchkiss

Research Methods and Society, Third Edition is designed to help undergraduate students acquire basic skills in methods of social science research. These skills provide a foundation for understanding research findings in the social sciences and for conducting social research. Just as important, such skills sets and principles can be applied to everyday situations to make sense of endless stream of claims and counterclaims confronted daily in print and electronic forms, including social media.

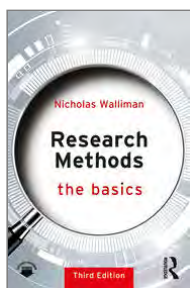
Routledge
December 2018 : 410pp
Pb: 978-0-815-36615-7 : **£96.99**
Hb: 978-0-815-36616-4 : **£245**
eBook: 978-1-351-25981-1

* For full contents and more information, visit: www.routledge.com/9780815366157

3RD EDITION

Research Methods

The Basics



Nicholas Walliman Oxford Brookes University, UK

Series: *The Basics*

Research Methods: The Basics is an accessible, user-friendly introduction to the different aspects of research theory, methods and practice. This third edition provides an expanded and fully updated resource suitable for students and practitioners in a wide range of disciplines including the natural sciences, social sciences and humanities. It is structured in two parts - the first covers the nature of knowledge and the reasons for doing research, the second explains the specific methods used to conduct an effective research project and how to propose, plan, carry out and write up a research project.

Routledge
December 2021 : 280pp
Pb: 978-0-367-69408-1 : **£20.99**
Hb: 978-0-367-69407-4 : **£150**
eBook: 978-1-003-14169-3

* For full contents and more information, visit: www.routledge.com/9780367694081

2ND EDITION

Social Research Methods by Example

Applications in the Modern World



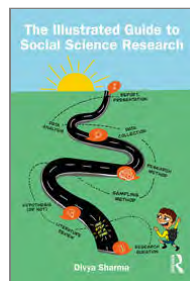
Yasemin Besen-Cassino , Dan Cassino Fairleigh Dickson University

This book sharpens students' understanding of the research process and the essential methods that researchers use to perform their work on the cutting edge of the social sciences. The new edition features updated examples across the chapters, reflecting new directions within the social sciences and both a diversity of voices and research output in recent years. The authors also expand their chapter overviews in key areas and weave discussion of validity and ethics carefully into the fabric of each chapter's focus. Written not only to introduce students to the basic principles of social science research, this book provides readers with a toolkit to carry out the process on their own.

Routledge
May 2023 : 342pp
Pb: 978-1-032-20920-3 : **£40.99**
Hb: 978-1-032-21005-6 : **£145**
eBook: 978-1-003-26632-7

* For full contents and more information, visit: www.routledge.com/9781032209203

The Illustrated Guide to Social Science Research



Divya Sharma

This accessible and engaging textbook helps students to get to grips with key concepts, issues, and practices in social science research through the use of fun and informative illustrations and examples.

Routledge
July 2024 : 248pp
Pb: 978-1-032-32377-0 : **£39.99**
Hb: 978-1-032-32379-4 : **£155**
eBook: 978-1-003-31473-8

* For full contents and more information, visit: www.routledge.com/9781032323770

2ND EDITION

The Research Companion

A practical guide for those in the social sciences, health and development



Petra M. Boynton University College London, UK

Books on social and behavioral research too often focus on theory and methods and overlook the practical skills needed to undertake a research project. The Research Companion brings hard-earned lessons from the real world to offer clear and honest advice to all students and practitioners within the social and health sciences. The structure of the book makes it useful for researchers at all levels of experience: the numerous examples and case histories make it ideal for students just beginning their first research project, while the breadth of coverage and wealth of practical tips will also help more experienced researchers.

Routledge
September 2016 : 300pp
Pb: 978-1-138-91761-3 : **£52.99**
Hb: 978-1-138-91760-6 : **£155**
eBook: 978-1-315-68890-9

* For full contents and more information, visit: www.routledge.com/9781138917613

2ND EDITION

The Researcher's Toolkit

The Complete Guide to Practitioner Research



David Wilkinson Research Fellow within the Work-Based Learning Unit at the University of Leeds, **Dennis Dokter**

Designed for those undertaking research for the first time, the second edition of *The Researcher's Toolkit* is a practical and accessible guide for all those partaking in small-scale research. Jargon-free and assuming no prior knowledge, it covers the entire research process, from defining a research topic or question through to its completion. This book is a must-read guide for students and budding researchers as well as educators seeking to explain academic research and writing to their pupils. It will benefit anyone looking to complete a research project whether inside academia or beyond.

Routledge
May 2023 : 178pp
Pb: 978-1-032-01810-2 : **£28.99**
Hb: 978-1-032-01809-6 : **£145**
eBook: 978-1-003-18015-9

* For full contents and more information, visit: www.routledge.com/9781032018102

11TH EDITION

Understanding Research Methods

An Overview of the Essentials



Michelle Newhart, **Mildred L. Patten**

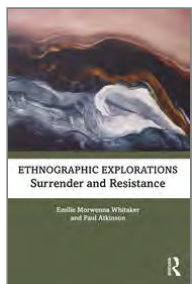
A perennial bestseller since 1997, this updated eleventh edition of *Understanding Research Methods* provides a detailed overview of all the important concepts traditionally covered in a research methods class. It covers the principles of both qualitative and quantitative research, and how to interpret statistics without computations, so is suitable for all students regardless of their math background. The book is organized so that each concept is treated independently and can be used in any order without resulting in gaps in knowledge—allowing it to be easily and precisely adapted to any course.

Routledge
June 2023 : 528pp
Pb: 978-0-367-55118-6 : **£96.99**
Hb: 978-0-367-55117-9 : **£255**
eBook: 978-1-003-09204-9

* For full contents and more information, visit: www.routledge.com/9780367551186

Ethnographic Explorations

Surrender and Resistance



Emilie Morwenna Whitaker Salford University, UK, **Paul Atkinson**

In *Ethnographic Explorations: Surrender and Resistance*, Whitaker and Atkinson, two experienced ethnographers, explore the complexities of fieldwork, analysis and writing from new perspectives. It takes the opportunity to reflect on Ethnography not just as a methodological perspective, but at a fundamental level. The book is intended for researchers at postgraduate and postdoctoral levels and at experienced researchers who want to read a different, sometimes challenging, take on ethnographic research and its outcomes.

Routledge
March 2023 : 184pp
Pb: 978-0-367-17441-5 : **£38.99**
Hb: 978-0-367-17440-8 : **£140**
eBook: 978-0-429-05680-2

* For full contents and more information, visit: www.routledge.com/9780367174415

Ethnographic Research in the Social Sciences



Edited by **Madhulika Sahoo**, **S. Jeyavelu**, **Anjali Kurane**

This book is an essential guide to scientifically conducting contemporary ethnographic research at undergraduate, postgraduate and doctoral levels in the social sciences, the humanities, and business studies. It addresses the methodological challenges of ethnographic research across the social sciences and highlights present time research areas, including digital ethnography, artificial intelligence, classroom pedagogy, hybrid organization and many more. A step-by-step, student friendly text, this book will be essential supplementary reading across the social sciences and the humanities, especially for those conducting fieldwork in the Global South.

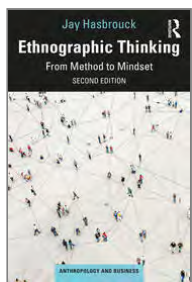
Routledge India
June 2023 : 282pp
Pb: 978-1-032-49233-9 : **£40.99**
Hb: 978-1-032-48008-4 : **£155**
eBook: 978-1-003-39277-4

* For full contents and more information, visit: www.routledge.com/9781032492339

2ND EDITION

Ethnographic Thinking

From Method to Mindset



Jay Hasbrouck

Series: Anthropology and Business

This second edition of *Ethnographic Thinking: From Method to Mindset* serves as a primer for practitioners who want to apply ethnography to real-world challenges and commercial ventures. This new edition now includes a section in each chapter focusing on practical advice to help readers activate key insights in their work. This work is essential reading for managers and strategists who want to tap into the full potential that an ethnographic perspective offers. It will also be of value to students and practitioners of applied ethnography, as well as professionals who would like to optimize the value of ethnographic thinking in their organizations.

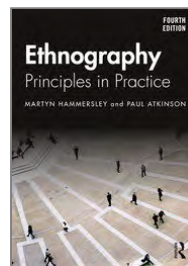
Routledge
April 2024 : 156pp
Pb: 978-1-032-46309-4 : **£40.99**
Hb: 978-1-032-46308-7 : **£155**
eBook: 978-1-003-38107-5

* For full contents and more information, visit: www.routledge.com/9781032463094

4TH EDITION

Ethnography

Principles in Practice



Martyn Hammersley The Open University, UK, **Paul Atkinson** Cardiff University, UK

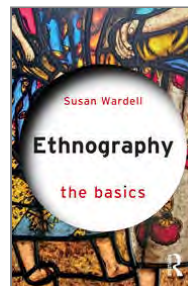
This edition has been expertly updated to reflect the important developments in digital and mobile technologies and social media. The ease with which recordings, audio or video, as well as photographs, can be produced via the use of mobile devices has opened up new tools and foci for ethnographers.

Routledge
April 2019 : 292pp
Pb: 978-1-138-50446-2 : **£45.99**
Hb: 978-1-138-50445-5 : **£170**
eBook: 978-1-315-14602-7

* For full contents and more information, visit: www.routledge.com/9781138504462

Ethnography

The Basics



Susan Wardell

Series: The Basics

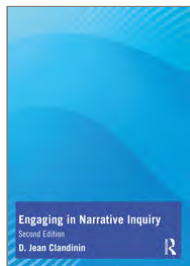
Ethnography: The Basics introduces a broad and beginner audience to ethnography, as a research methodology with diverse applications. By using everyday language, and developing a warm and inclusive tone, the book provides an accessible entry point to the topic.

Routledge
May 2025 : 278pp
Pb: 978-1-032-52012-4 : **£19.99**
Hb: 978-1-032-51311-9 : **£155**
eBook: 978-1-003-40488-0

* For full contents and more information, visit: www.routledge.com/9781032520124

2ND EDITION

Engaging in Narrative Inquiry



D. Jean Clandinin

In *Engaging in Narrative Inquiry, Second Edition*, D. Jean Clandinin, a pioneer in narrative research, updates her classic formulation on narrative inquiry, clarifying, extending, and refining methods. The increasing interest in narrative inquiry as research methodology across disciplines makes this an essential guide and an excellent text for graduate courses in qualitative inquiry, education and nursing research, sociology, and all courses in autobiographical and narrative research and inquiry.

Routledge
September 2022 : 176pp
Pb: 978-1-032-14610-2 : **£45.99**
Hb: 978-1-032-14609-6 : **£155**
eBook: 978-1-003-24014-3

* For full contents and more information, visit: www.routledge.com/9781032146102

2ND EDITION

Essentials of Qualitative Inquiry



Maria J. Mayan

Series: Qualitative Essentials

Essentials of Qualitative Inquiry, Second Edition is the key resource for introducing applied researchers into the qualitative tradition due to its clear exposition, step-by-step approach, and emphasis on methodological coherence. Concise and inexpensive, this edition includes new material on methods, sampling, and analysis and introduces current trends in community-based research and arts-based research, among other updates.

Routledge
May 2023 : 328pp
Pb: 978-1-629-58327-3 : **£31.99**
Hb: 978-1-629-58326-6 : **£135**
eBook: 978-1-003-38575-2

* For full contents and more information, visit: www.routledge.com/9781629583273

2ND EDITION

Qualitative Research

The Essential Guide to Theory and Practice



Maggi Savin-Baden Prof of Higher Education Research at Coventry University, UK, **Claire Howell Major** Prof of Higher Education at the University of Alabama, USA

The second edition of *Qualitative Research* is a one-stop resource for all those approaching qualitative research for the first time as well as those revisiting core concepts and issues. It presents a comprehensive overview of this rapidly developing field of inquiry, cleverly combined with practical, hands-on advice on how to conduct a successful qualitative study. This book is enhanced with the addition of online Instructor and Student Resources including videos, diagrams, an instructor manual, PowerPoint slides and links to further resources. This new edition is an indispensable companion and makes for ideal reading for all those involved in qualitative research worldwide.

Routledge
October 2025 : 664pp
Pb: 978-1-032-77458-9 : **£45.99**
Hb: 978-1-032-77460-2 : **£155**
eBook: 978-1-003-48319-9

* For full contents and more information, visit: www.routledge.com/9781032774589

Qualitative Research Using Social Media



Gwen Bouvier, Joel Rasmussen

This book shows how to conduct qualitative research projects using social media data. It takes the reader through the stages of choosing data, formulating a research question, and choosing and applying method(s).

Routledge
March 2022 : 214pp
Pb: 978-0-367-33347-8 : **£45.99**
Hb: 978-0-367-33350-8 : **£155**
eBook: 978-0-429-31933-4

* For full contents and more information, visit: www.routledge.com/9780367333478

2ND EDITION

Thinking with Theory in Qualitative Research



Alecia Y. Jackson Appalachian State University, USA,
Lisa A. Mazzei University of Oregon, USA

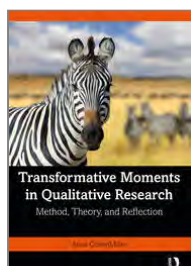
Thinking with Theory in Qualitative Research, Second Edition demonstrates how to enact various philosophical concepts in practices of inquiry, effectively opening up the process of thought in qualitative studies. In the ten years since the first edition was published, *Thinking with Theory* has become a vanguard text in the field of postfoundational inquiry for its accessible but thorough introductions to philosophically informed inquiry. This book is for experienced and novice researchers, and students in introductory, general, and advanced qualitative inquiry courses, who may also be first-time readers of philosophy.

Routledge
July 2022 : 170pp
Pb: 978-1-138-95214-0 : **£45.99**
Hb: 978-1-138-95213-3 : **£155**
eBook: 978-1-315-66776-8

* For full contents and more information, visit: www.routledge.com/9781138952140

Transformative Moments in Qualitative Research

Method, Theory, and Reflection



Anna Cohen-Miller

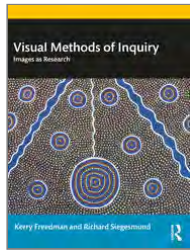
This groundbreaking book, eloquently fuses powerful stories of research with methodological insight and theory. Each chapter offers a clear, practical, and engaging exploration of qualitative inquiry, emphasizing the power of research to foster equity, inclusion, and justice-centered practice (e.g., social justice, economic justice, environmental/ecological justice). This book is an invaluable resource for graduate students, practitioners, and researchers to enhance their research and praxis. It will appeal to audiences across disciplinary backgrounds including social sciences, educational sciences, humanities, and STEM and health fields.

Routledge
December 2023 : 314pp
Pb: 978-1-032-38170-1 : **£41.99**
Hb: 978-1-032-38168-8 : **£145**
eBook: 978-1-003-34381-3

* For full contents and more information, visit: www.routledge.com/9781032381701

Visual Methods of Inquiry

Images as Research



Kerry Freedman , Richard Siegesmund

Visual Methods of Inquiry: Images as Research presents qualitative researchers in the social sciences with the benefits, applications, and forms of visual research methods. It includes a wide variety of images to illustrate the many uses of visual methods for social research. Students of social science and the visual arts will find this book useful in expanding and improving their methods of inquiry. Artists and researchers already familiar with visual methods will find that this book clarifies the ways the visual works in various research contexts and provides helpful language to describe and explain those methods.

Routledge

October 2023 : 238pp

Pb: 978-0-367-25048-5 : £37.99

Hb: 978-0-367-25049-2 : £145

eBook: 978-0-429-28572-1

* For full contents and more information, visit: www.routledge.com/9780367250485

2ND EDITION

Design Methods and Practices for Research of Project Management



Edited by **Beverly Pasion , Rodney Turner**

Design Methods and Practices for Research of Project Management is the most comprehensive guide on how to do research of and in project management. This second edition of the authoritative reference book offers a substantial update on the first edition with over 60% new content and so provides both practitioner and student researchers with a fully up-to-date and complete guide to research practice on project management.

Routledge
May 2024 : 368pp
Pb: 978-1-032-12387-5 : **£38.99**
Hb: 978-1-032-74496-4 : **£145**
eBook: 978-1-003-46951-3

* For full contents and more information, visit: www.routledge.com/9781032123875

2ND EDITION

Management Research

Applying the Principles of Business Research Methods



Susan Rose , Nigel Spinks , Ana Isabel Canhoto

Management Research supports new researchers on every step of the research journey, from defining a project to communicating its findings, as well as balancing the technical aspects of research with the management of the project itself. Management Research provides essential reading for undergraduate and postgraduate students undertaking a dissertation, thesis or research project, as well as professionals currently practicing in the field.

Routledge
December 2023 : 482pp
Pb: 978-1-032-46295-0 : **£57.99**
Hb: 978-1-032-46296-7 : **£190**
eBook: 978-1-003-38100-6

* For full contents and more information, visit: www.routledge.com/9781032462950

3RD EDITION

Planning Research in Hospitality and Tourism



Levent Altinay Oxford Brookes University, UK, Alexandros Paraskevas , Faizan Ali

Planning Research in Hospitality and Tourism, 3rd Edition is an accessible, concise and practical guide to planning, conducting and analysing research in tourism and hospitality. Enriched with insightful case studies throughout, this volume is essential reading for all tourism and hospitality researchers.

Routledge
June 2024 : 372pp
Pb: 978-1-032-52258-6 : **£51.99**
Hb: 978-1-032-52257-9 : **£155**
eBook: 978-1-003-40579-5

* For full contents and more information, visit: www.routledge.com/9781032522586

Research Methodologies for Business Management



Vanessa Ratten La Trobe University, Australia

Most existing research methodologies texts take a more general approach or are edited books of previously published articles or chapters written by different authors. This book, written by a business management scholar, covers the fundamentals of business management research and its methodologies in a seamless, unified manner. It builds upon the knowledge by examining both qualitative and quantitative research methodologies in the context of business management. It will help business management students and junior researchers quickly build an essential base of knowledge and gain a strategic advantage in publishing and reviewing business related research.

Routledge
February 2023 : 158pp
Pb: 978-1-032-32337-4 : **£46.99**
Hb: 978-1-032-32338-1 : **£140**
eBook: 978-1-003-31451-6

* For full contents and more information, visit: www.routledge.com/9781032323374

2ND EDITION

Research Methods for Environmental Studies

A Social Science Approach



Mark Kanazawa Carleton College, USA

The methodological needs of environmental studies are unique in the breadth of research questions that can be posed, calling for a textbook that covers a broad swath of approaches to conducting research with potentially many different kinds of evidence. Drawing on a variety of extended and updated examples to encourage problem-based learning and fully addressing the challenges associated with interdisciplinary investigation, this book will be an essential resource for students embarking on courses exploring research methods in environmental studies.

Routledge
July 2023 : 498pp
Pb: 978-1-032-19840-8 : **£40.99**
Hb: 978-1-032-19841-5 : **£155**
eBook: 978-1-003-26111-7

* For full contents and more information, visit: www.routledge.com/9781032198408

Researching and Analysing Business

Research Methods in Practice



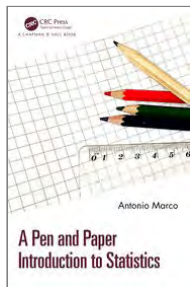
Edited by **Pantea Forouei , Charles Dennis** Middlesex Business School, UK

Researching and Analysing Business provides an accessible and practical guide to various data collection and data analysis techniques within management. Unique in its practical approach, this book is required and recommended reading for advanced undergraduate and postgraduate students studying research methods.

Routledge
December 2023 : 456pp
Pb: 978-0-367-62065-3 : **£44.99**
Hb: 978-0-367-62064-6 : **£160**
eBook: 978-1-003-10777-4

* For full contents and more information, visit: www.routledge.com/9780367620653

A Pen and Paper Introduction to Statistics



Antonio Marco University of Essex, U.K.

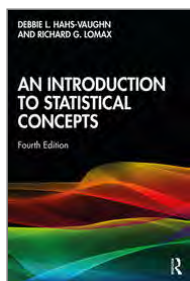
This book proposes to reverse the way statistics is taught, by starting with the introduction of linear models. The reader will have the opportunity to work through the examples and compute sums of squares by just drawing and counting, and finally evaluating whether observed differences are statistically significant by using the tables provided. Intended for students, professional life scientists, and those with little prior knowledge of statistics, this book is for all with simple and clear examples, computations and drawings helping the reader to, not only do, but also to understand statistics.

Chapman & Hall
December 2023 : 160pp
Pb: 978-1-032-50510-7 : **£35.99**
Hb: 978-1-032-50511-4 : **£105**
eBook: 978-1-003-39882-0

* For full contents and more information, visit: www.routledge.com/9781032505107

4TH EDITION

An Introduction to Statistical Concepts



Debbie L. Hahs-Vaughn University of Central Florida, USA, **Richard Lomax** The Ohio State University, USA

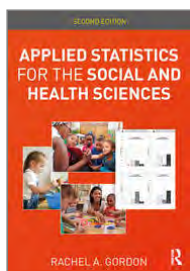
This comprehensive, flexible text is used in both one- and two-semester courses to review introductory through intermediate statistics. Instructors select the topics that are most appropriate for their course. Its conceptual approach helps students more easily understand the concepts and interpret SPSS and research results. Noted for its crystal clear explanations, key concepts are simply stated and occasionally reintroduced and related to one another for reinforcement. Numerous examples demonstrate their relevance. This edition features even more explanation to increase understanding of the concepts and has annotated script for using R.

Routledge
February 2020 : 1186pp
Hb: 978-1-138-65055-8 : **£130**
eBook: 978-1-315-62435-8

* For full contents and more information, visit: www.routledge.com/9781138650558

2ND EDITION

Applied Statistics for the Social and Health Sciences



Rachel A. Gordon Northern Illinois University, USA

Covering basic univariate and bivariate statistics and regression models for nominal, ordinal, and interval outcomes, this textbook provides graduate students in the social and health sciences with fundamental skills to estimate, interpret, and publish quantitative research using contemporary standards. Reflecting the growing importance of 'Big Data', this thoroughly revised and streamlined new edition, outlines changes in best practice in use of statistics in social and health sciences, draws upon new literatures and empirical examples, and highlights the importance of statistical programming, including coding, reproducibility, transparency, and open science.

Routledge
July 2023 : 800pp
Pb: 978-1-032-32344-2 : **£46.99**
Hb: 978-1-032-32343-5 : **£155**
eBook: 978-1-003-31453-0

* For full contents and more information, visit: www.routledge.com/9781032323442

9TH EDITION

Interpreting Basic Statistics

A Workbook Based on Excerpts from Journal Articles



Zealure C. Holcomb, **Keith S. Cox** University of North Carolina, USA

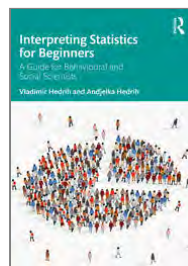
Interpreting Basic Statistics gives students valuable practice in interpreting statistical reporting as it actually appears in peer-reviewed journals. The questions in each exercise are divided into two parts: (1) Factual Questions and (2) Questions for Discussion. The factual questions require careful reading for details, while the discussion questions show that interpreting statistics is more than a mathematical exercise. Each exercise covers a limited number of topics, making it easy to coordinate the exercises with lectures or a traditional statistics textbook.

Routledge
September 2021 : 258pp
Pb: 978-0-367-56197-0 : **£66.99**
Hb: 978-0-367-56051-5 : **£200**
eBook: 978-1-003-09676-4

* For full contents and more information, visit: www.routledge.com/9780367561970

Interpreting Statistics for Beginners

A Guide for Behavioural and Social Scientists



Vladimir Hedrih, **Andjelka Hedrih**

Interpreting Statistics for Beginners teaches readers to correctly read and interpret results of basic statistical procedures as they are presented in scientific literature, and to understand what they can and cannot infer from such results. Written in an easy-to-read style and focusing on explaining concepts behind statistical calculations, the book is most helpful for readers with no previous training in statistics, and also those wishing to bridge the conceptual gap between doing the statistical calculations and interpreting the results.

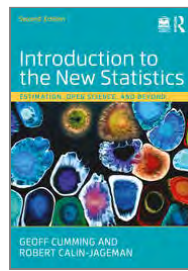
Routledge
February 2022 : 204pp
Pb: 978-0-367-61852-0 : **£39.99**
Hb: 978-0-367-62051-6 : **£155**
eBook: 978-1-003-10771-2

* For full contents and more information, visit: www.routledge.com/9780367618520

2ND EDITION

Introduction to the New Statistics

Estimation, Open Science, and Beyond



Geoff Cumming, **Robert Calin-Jageman**

This fully revised and updated second edition is an essential introduction to inferential statistics. It is the first introductory statistics text to use an estimation approach with meta-analysis ("the new statistics") from the start and also to explain the new and exciting Open Science practices, which encourage replication and enhance the trustworthiness of research. Designed for introduction to statistics, data analysis or quantitative methods courses in psychology, education and other social and health sciences, researchers interested in understanding Open Science and the new statistics will also appreciate this book.

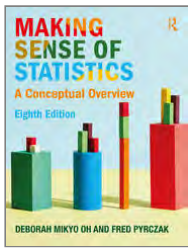
Routledge
March 2024 : 610pp
Pb: 978-0-367-53150-8 : **£72.99**
Hb: 978-0-367-53149-2 : **£225**
eBook: 978-1-032-68947-0

* For full contents and more information, visit: www.routledge.com/9780367531508

8TH EDITION

Making Sense of Statistics

A Conceptual Overview

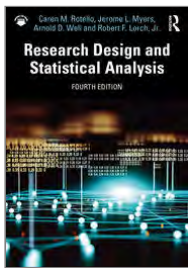
**Deborah M. Oh , Fred Pyrczak**

Making Sense of Statistics, Eighth Edition, is the ideal introduction to the concepts of descriptive and inferential statistics for students undertaking their first research project. It presents each statistical concept in a series of short steps, then uses worked examples and exercises to enable students to apply their own learning. This conceptual book is useful for all study levels, from undergraduate to doctoral level across disciplines. Once students understand and feel comfortable with the statistics presented in this book, they should find it easy to master additional statistical concepts.

Routledge
June 2023 : 284pp
Pb: 978-1-032-28964-9 : **£52.99**
Hb: 978-1-032-28962-5 : **£145**
eBook: 978-1-003-29935-6

* For **full contents** and more information, visit: www.routledge.com/9781032289649

4TH EDITION

Research Design and Statistical Analysis**Caren M. Rotello , Jerome L. Myers , Arnold D. Well , Robert F. Lorch, Jr.** University of Kentucky, Lexington, USA

This fully updated fourth edition of Research Design and Statistical Analysis provides comprehensive coverage of the design principles and statistical concepts necessary to make sense of real data. Incorporating the analyses of both experimental and observational data, and with coverage that is broad and deep enough to serve a two-semester sequence, this textbook is suitable for researchers, graduate students and advanced undergraduates in psychology, education, and other behavioral, social, and health sciences. The book is supported by a robust set of digital resources, including data files and exercises from the book in an Excel format, R scripts, and a solutions manual.

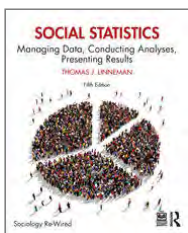
Routledge
January 2025 : 834pp
Pb: 978-1-032-89728-8 : **£80.99**
Hb: 978-1-032-59210-7 : **£155**
eBook: 978-1-003-45355-0

* For **full contents** and more information, visit: www.routledge.com/9781032897288

5TH EDITION

Social Statistics

Managing Data, Conducting Analyses, Presenting Results

**Thomas J. Linneman** The College of William and Mary, USA*Series: Sociology Re-Wired*

With a clear, engaging writing style and fascinating examples using a variety of real data, this text covers the contemporary statistical techniques that students will encounter in the world of social research. It covers these techniques at an introductory level and carefully guides students through increasingly complex examples without intimidating them.

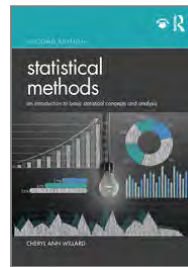
Routledge
August 2025 : 668pp
Pb: 978-1-032-49035-9 : **£105**
Hb: 978-1-032-49037-3 : **£155**
eBook: 978-1-003-39196-8

* For **full contents** and more information, visit: www.routledge.com/9781032490359

2ND EDITION

Statistical Methods

An Introduction to Basic Statistical Concepts and Analysis

**Cheryl Ann Willard**

Statistical Methods explains core statistical concepts and basic analysis techniques for the beginning undergraduate student in statistics or quantitative research methods. Each chapter covers a core concept before guiding students through a series of exercises designed to apply and demonstrate their knowledge. Expanded coverage of the second edition includes two new chapters on essential topics such as factorial analysis of variance, additional chapter exercises, and a full suite of instructor resources – powerpoint slides, instructor manual and test bank questions.

Routledge
March 2020 : 364pp
Pb: 978-0-367-20352-8 : **£60.99**
Hb: 978-0-367-20351-1 : **£195**
eBook: 978-0-429-26103-9

* For **full contents** and more information, visit: www.routledge.com/9780367203528

4TH EDITION

Statistics Explained**Perry R. Hinton** Warwick University, UK

Statistics Explained is an accessible introduction to statistical concepts and ideas for undergraduate and postgraduate students new to the field. It makes few assumptions about the reader's statistical knowledge, carefully explaining each step of the analysis and the logic behind it. This new edition will include instructions and tips on how to present data and findings from SPSS output files, updated and more extensive case studies, and a section on alternative statistical software like R.

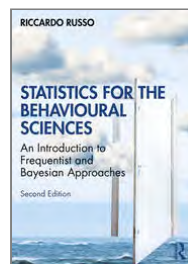
Routledge
October 2024 : 356pp
Pb: 978-0-367-36635-3 : **£39.99**
Hb: 978-0-367-36638-4 : **£145**
eBook: 978-0-429-35326-0

* For **full contents** and more information, visit: www.routledge.com/9780367366353

2ND EDITION

Statistics for the Behavioural Sciences

An Introduction to Frequentist and Bayesian Approaches

**Riccardo Russo**

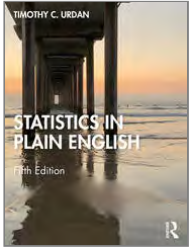
This accessible textbook is for those without a mathematical background (just some notions of basic algebra are sufficient) and provides a comprehensive introduction to all topics covered in introductory behavioural science statistics courses. This timely and highly readable text will be invaluable to undergraduate students of psychology and research methods courses in related disciplines, as well as anyone with an interest in understanding and applying the basic concepts and inferential techniques associated with statistics in the behavioural sciences.

Routledge
November 2020 : 330pp
Pb: 978-1-138-71150-1 : **£39.99**
Hb: 978-1-138-71148-8 : **£155**
eBook: 978-1-315-20041-5

* For **full contents** and more information, visit: www.routledge.com/9781138711501

5TH EDITION

Statistics in Plain English



Timothy C. Urdan Santa Clara University, USA

Statistics in Plain English is a straightforward, conversational introduction to statistics that delivers exactly what its title promises. Each chapter begins with a brief overview of a statistic that describes what the statistic does and when to use it, followed by a detailed step-by-step explanation of how the statistic works and exactly what information it provides. Chapters also include an example of the statistic (or statistics) in use in real-world research, "Worked Examples," "Writing It Up" sections that demonstrate how to write about each statistic, "Wrapping Up and Looking Forward" sections, and practice work problems.

Routledge

March 2022 : 322pp

Pb: 978-0-367-34283-8 : **£37.99**

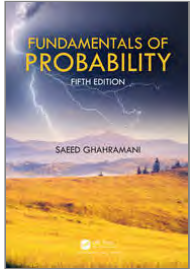
Hb: 978-0-367-34282-1 : **£195**

eBook: 978-1-032-22944-7 : **£33.99**

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5TH EDITION

Fundamentals of Probability



Saeed Ghahramani Western New England University, Springfield, Massachusetts, USA

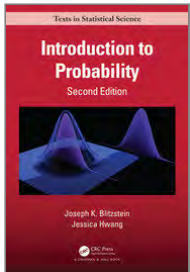
This one- or two-term calculus-based basic probability text is written for majors in mathematics, physical sciences, engineering, statistics, actuarial science, business and finance, operations research, and computer science. It presents probability in a natural way: through interesting and instructive examples and exercises that motivate the theory, definitions, theorems, and methodology. This book is mathematically rigorous and, at the same time, closely matches the historical development of probability. Whenever appropriate, historical remarks are included, and the 2096 examples and exercises have been designed to arouse curiosity and encourage students to delve into the theory.

Chapman & Hall
May 2024 : 700pp
Hb: 978-1-032-36608-1 : £130
IEPB: 978-1-032-80353-1 : £49.99
eBook: 978-1-003-33289-3

* For full contents and more information, visit: www.routledge.com/9781032366081

2ND EDITION

Introduction to Probability, Second Edition



Joseph K. Blitzstein Harvard University, Cambridge, Massachusetts, USA, **Jessica Hwang** Stanford University, California, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

Undergraduate probability book that assumes one-semester of calculus. One key is the emphasis on "stories" for the probability distributions (which I mean in both an intuitive and technical sense): there are a dozen or so key distributions (Normal, Binomial, Poisson, etc.) that are incredibly widely-used in statistics, but a lot of books just write down formulas for them without explaining clearly why these particular distributions are so important, or how they are all connected. Each of these distributions has a "story" (a natural application where it arises), and thinking about stories makes the distributions easier to remember, understand, and work with.

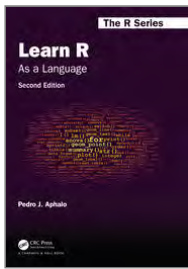
Chapman & Hall
February 2019 : 634pp
Hb: 978-1-138-36991-7 : £76.99
eBook: 978-0-429-42835-7

* For full contents and more information, visit: www.routledge.com/9781138369917

2ND EDITION

Learn R

As a Language



Pedro J. Aphalo University of Helsinki, Faculty of Biological and Environmental Sciences

Series: *Chapman & Hall/CRC The R Series*

Learning a computer language like R can be either frustrating, fun, or boring. Having fun requires challenges that wake up the learner's curiosity but also provide an emotional reward on overcoming them. This is the second edition of a book designed so that it includes smaller and bigger challenges, in what I call playgrounds, in the hope that all readers will enjoy their path to R fluency.

Chapman & Hall
April 2024 : 466pp
Pb: 978-1-032-51699-8 : **£67.99**
Hb: 978-1-032-51843-5 : **£175**
eBook: 978-1-003-40418-7

* For full contents and more information, visit: www.routledge.com/9781032516998

2ND EDITION

R Data Analysis without Programming

Explanation and Interpretation



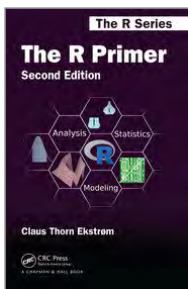
David W. Gerbing Portland State University, USA

The new edition of this innovative book, prepares the readers to quickly analyse data and interpret statistical results using R. Professor Gerbing has developed lessR, which is a ground-breaking method in alleviating the challenges of R programming. The lessR extends R, removing the need for programming. This edition expands upon the first edition's introduction to R through lessR which enables the readers to learn how to organize data for analysis, read the data into R, and generate output without performing numerous functions and programming exercises first.

Routledge
January 2023 : 378pp
Pb: 978-1-032-24403-7 : **£59.99**
Hb: 978-1-032-24402-0 : **£140**
eBook: 978-1-003-27841-2

* For full contents and more information, visit: www.routledge.com/9781032244037

2ND EDITION

R Primer

Claus Thorn Ekstrom University of Copenhagen, Denmark

Series: *Chapman & Hall/CRC The R Series*

Newcomers to R are often intimidated by the command-line interface, the vast number of functions and packages, or the processes of importing data and performing a simple statistical analysis. The R Primer provides a collection of concise examples and solutions to R problems frequently encountered by new users of this statistical software. This new edition adds coverage of R Studio and reproducible research.

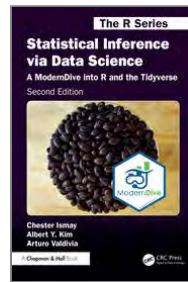
Chapman & Hall
March 2017 : 426pp
Pb: 978-1-138-63197-7 : **£59.99**
Hb: 978-1-498-77255-6 : **£125**
eBook: 978-1-315-15441-1

* For full contents and more information, visit: www.routledge.com/9781138631977

2ND EDITION

Statistical Inference via Data Science

A ModernDive into R and the Tidyverse



Chester Ismay DataCamp, **Albert Y. Kim**, **Arturo Valdivia**

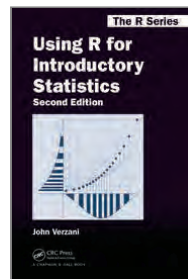
Series: *Chapman & Hall/CRC The R Series*

Offers a comprehensive guide to learning statistical inference with data science tools widely used in industry, academia, and government. Ideal for those new to statistics or looking to deepen their knowledge, this edition provides a clear entry point into data science and modern statistical methods.

Chapman & Hall
May 2025 : 490pp
Pb: 978-1-032-70837-9 : **£68.99**
Hb: 978-1-032-72451-5 : **£170**
eBook: 978-1-032-72454-6

* For full contents and more information, visit: www.routledge.com/9781032708379

2ND EDITION

Using R for Introductory Statistics

John Verzani CUNY/College of Staten Island, New York, USA

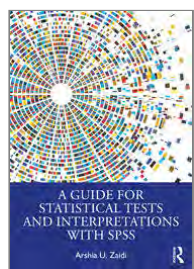
Series: *Chapman & Hall/CRC The R Series*

The second edition of a bestselling textbook, Using R for Introductory Statistics guides students through the basics of R, helping them overcome the sometimes steep learning curve. The author does this by breaking the material down into small, task-oriented steps. The second edition maintains the features that made the first edition so popular, while updating data, examples, and changes to R in line with the current version.

Chapman & Hall
June 2014 : 518pp
Hb: 978-1-466-59073-1 : **£67.99**
eBook: 978-1-315-37308-9

* For full contents and more information, visit: www.routledge.com/9781466590731

A Guide for Statistical Tests and Interpretations with SPSS



Arshia U. Zaidi

A Guide for Statistical Tests and Interpretations with SPSS is designed for students taking basic and advanced courses in statistics, taking an integrative and practical approach to learning statistics. It guides students through navigating SPSS outputs and writing quantitatively, dealing with technical and substantive interpretations without resorting to complex mathematical formulae. With SPSS screenshots and step-by-step advice, this book will be useful for all undergraduate and graduate students in the social sciences and humanities, as a supplemental textbook to provide practical guidance on moving through all steps of statistical testing and analysis.

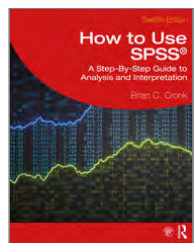
Routledge
October 2024 : 244pp
Pb: 978-1-032-10210-8 : **£48.99**
Hb: 978-1-032-10520-8 : **£140**
eBook: 978-1-003-21569-1

* For full contents and more information, visit: www.routledge.com/9781032102108

12TH EDITION

How to Use SPSS®

A Step-By-Step Guide to Analysis and Interpretation



Brian C. Cronk

This book is designed with the novice computer user in mind and for people who have no previous experience using SPSS. Each chapter is divided into short sections that describe the statistic being used, important underlying assumptions, and how to interpret the results and express them in a research report. The book begins with the basics, such as starting SPSS, defining variables, and entering and saving data. It covers all major statistical techniques typically taught in beginning statistics classes, such as descriptive statistics, graphing data, prediction and association, parametric inferential statistics, nonparametric inferential statistics and statistics for test construction.

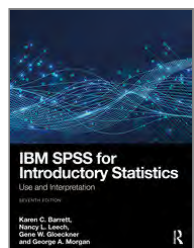
Routledge
January 2024 : 252pp
Pb: 978-1-032-58235-1 : **£65.99**
Hb: 978-1-032-58519-2 : **£155**
eBook: 978-1-003-45046-7

* For full contents and more information, visit: www.routledge.com/9781032582351

7TH EDITION

IBM SPSS for Introductory Statistics

Use and Interpretation



Karen C. Barrett Colorado State University, USA, **Nancy L. Leech** University of Colorado at Denver, USA, **Gene W. Gloeckner** Colorado State University, USA, **George A. Morgan** Colorado State University, USA

IBM SPSS for Introductory Statistics is designed to help students learn how to analyze and interpret research. In easy-to-understand language, the authors show readers how to choose the appropriate statistic based on the design, and to interpret outputs appropriately. This volume is an invaluable supplemental (or lab text) book for students. In addition, this book and its companion, IBM SPSS for Intermediate Statistics, are useful as guides/reminders to faculty and professionals regarding the specific steps to take to use SPSS and/or how to use and interpret parts of SPSS with which they are unfamiliar.

Routledge
September 2025 : 258pp
Pb: 978-1-032-41030-2 : **£47.99**
Hb: 978-1-032-41031-9 : **£155**
eBook: 978-1-003-35590-8

* For full contents and more information, visit: www.routledge.com/9781032410302

18TH EDITION

IBM SPSS Statistics 29 Step by Step

A Simple Guide and Reference



Darren George, Paul Mallery

IBM SPSS Statistics 29 Step by Step: A Simple Guide and Reference, eighteenth edition, takes a straightforward, step-by-step approach that makes SPSS software clear to beginners and experienced researchers alike. Accompanied by updated online instructor's materials and website data files, this is an essential resource for instructors and students needing a guide to using SPSS in their work, across the social sciences, behavioural sciences, education, and beyond.

Routledge
March 2024 : 440pp
Pb: 978-1-032-62193-7 : **£75.99**
Hb: 978-1-032-62212-5 : **£235**
eBook: 978-1-032-62215-6

* For full contents and more information, visit: www.routledge.com/9781032621937

3RD EDITION

SPSS Explained



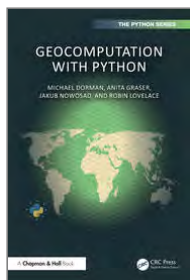
Perry R. Hinton Warwick University, UK, **Isabella McMurray** University of Bedfordshire, UK, **Charlotte Brownlow**, **Peter C. Terry**

SPSS Explained provides the student with all that they need to undertake statistical analysis using SPSS. It combines a step-by-step approach to each procedure with easy-to-follow screenshots at each stage of the process. The authors have many years of experience in teaching SPSS to students from a wide range of disciplines. Their understanding of SPSS users' concerns, as well as a knowledge of the type of questions students ask, form the foundation of this book.

Routledge
September 2023 : 386pp
Pb: 978-0-367-36699-5 : **£52.99**
Hb: 978-0-367-36698-8 : **£145**
eBook: 978-0-429-35086-3

* For full contents and more information, visit: www.routledge.com/9780367366995

Geocomputation with Python



Michael Dorman , Anita Graser , Jakub Nowosad , Robin Lovelace University of Leeds, UK

Series: Chapman & Hall/CRC The Python Series

Geocomputation with Python is a comprehensive resource for working with geographic data with the most popular programming language in the world. The book gives an overview of Python's capabilities for spatial data analysis, as well as dozens of worked-through examples covering the entire range of standard GIS operations. Another unique feature is that this book is part of a wider community.

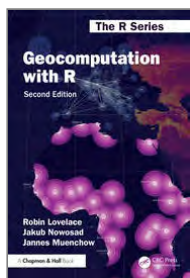
Geocomputation with Python is a sister project of Geocomputation with R (Lovelace, Nowosad, and Muenchow 2019), a book on geographic data analysis, visualization, and modeling using the R programming language that has numerous contributors and an active community.

Chapman & Hall
February 2025 : 344pp
Pb: 978-1-032-46065-9 : **£58.99**
Hb: 978-1-032-45891-5 : **£160**
eBook: 978-1-003-37991-1

* For full contents and more information, visit: www.routledge.com/9781032460659

2ND EDITION

Geocomputation with R



Robin Lovelace University of Leeds, UK, **Jakub Nowosad , Jannes Muenchow** Friedrich Schiller University, Jena, Germany

Series: Chapman & Hall/CRC The R Series

Geocomputation with R is for people who want to analyze, visualize, and model geographic data with open source software. The book provides a foundation for learning how to solve a wide range of geographic data analysis problems in a reproducible, and therefore scientifically sound and scalable way. The second edition features numerous updates, including the adoption of the high-performance terra package for all raster data processing, detailed coverage of the spherical geometry engine s2, updated information on coordinate reference systems and new content on openEO, STAC, COG, and gdal.cubes. The book equips you with the knowledge and skills to tackle a wide range of issues.

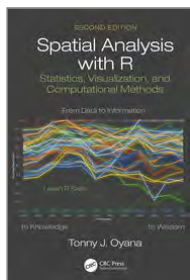
Chapman & Hall
May 2025 : 420pp
Pb: 978-1-032-24888-2 : **£58.99**
Hb: 978-1-032-22979-9 : **£160**
eBook: 978-1-003-28056-9

* For full contents and more information, visit: www.routledge.com/9781032248882

2ND EDITION

Spatial Analysis with R

Statistics, Visualization, and Computational Methods



Tonny J. Oyana

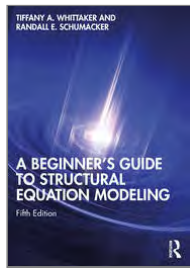
The implementation of new tools and methods for spatial analysis using R, the use and growth of artificial intelligence, machine learning and deep learning algorithms with a spatial perspective, and the interdisciplinary use of spatial analysis are all new topics in this second edition. The book provides a balance between concepts and practicum of spatial statistics with a comprehensive coverage of the most important approaches to understand spatial data, analyze spatial relationships and spatial patterns, and predict spatial processes. It offers new datasets, insights, and excellent illustrations to senior undergraduate and first year graduate students in geography and geosciences.

CRC Press
September 2023 : 354pp
Pb: 978-0-367-53238-3 : **£48.99**
Hb: 978-0-367-86085-1 : **£125**
eBook: 978-1-003-02164-3

* For full contents and more information, visit: www.routledge.com/9780367532383

5TH EDITION

A Beginner's Guide to Structural Equation Modeling



Randall E. Schumacker, Tiffany A. Whittaker

A Beginner's Guide to Structural Equation Modeling, fifth edition, has been redesigned with consideration of a true beginner in structural equation modeling (SEM) in mind. The book covers introductory through intermediate topics in SEM in more detail than in any previous edition. This book is intended for true beginners in structural equation modeling and is designed for introductory graduate courses in structural equation modeling taught in psychology, education, business, and the social and healthcare sciences. This book also appeals to researchers and faculty in various disciplines. Prerequisites include correlation and regression methods.

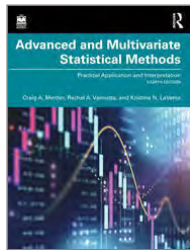
Routledge
May 2022 : 418pp
Pb: 978-0-367-47796-7 : **£76.99**
Hb: 978-0-367-49015-7 : **£155**
eBook: 978-1-003-04401-7

* For full contents and more information, visit: www.routledge.com/9780367477967

8TH EDITION

Advanced and Multivariate Statistical Methods

Practical Application and Interpretation



Craig A. Mertler Arizona State University, USA, **Rachel A. Vannatta, Kristina N. LaVenia** Bowling Green State University

Advanced and Multivariate Statistical Methods, Eighth Edition offers conceptual and practical insights into multivariate statistical techniques, designed for students without requiring deep technical or mathematical expertise. This updated text facilitates conceptual understanding of multivariate statistical methods by limiting the technical nature of the discussion of those concepts and focusing on their practical applications. This book is tailored for students taking a multivariate statistics course in graduate programs across a range of fields, including psychology, education, sociology, criminal justice, social work, mass communication, and nursing.

Routledge
September 2025 : 352pp
Pb: 978-1-032-89050-0 : **£145**
Hb: 978-1-032-91296-7 : **£155**
eBook: 978-1-003-56243-6

* For full contents and more information, visit: www.routledge.com/9781032890500

Data Analytics for the Social Sciences

Applications in R



G. David Garson

This book presents a complete exploration of statistical data analysis in R for a wide variety of social science disciplines and quantitative methods courses. Covering all the bases including multilevel modeling and ANOVA / ANCOVA, the book also goes further by looking at topics such as: neural networks to implement deep learning, thus solving complex problems other algorithms cannot; how to deal with missing values in real world data; and the use of text analytics. R code input and output is included. Suitable for all advanced level undergraduate and postgraduate students learning statistical data analysis.

Routledge
November 2021 : 704pp
Pb: 978-0-367-62427-9 : **£94.99**
Hb: 978-0-367-62429-3 : **£265**
eBook: 978-1-003-10939-6

* For full contents and more information, visit: www.routledge.com/9780367624279

Doing Statistical Analysis

A Student's Guide to Quantitative Research



Christer Thrane

Doing Statistical Analysis looks at three kinds of statistical research questions – descriptive, associational and inferential – and shows students how to conduct statistical analyses and interpret the results. Keeping equations to a minimum, it uses a conversational style and relatable examples such as football, covid-19 and tourism, to aid understanding. Each chapter contains practice exercises, and a section showing students how to reproduce the statistical results in the book using Stata and SPSS. Its accessible approach means this is the ideal textbook for undergraduate students across the social and behavioural sciences needing to build their confidence with statistical analysis.

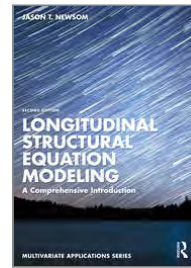
Routledge
July 2022 : 266pp
Pb: 978-1-032-17132-6 : **£55.99**
Hb: 978-1-032-18030-4 : **£155**
eBook: 978-1-003-25255-9

* For full contents and more information, visit: www.routledge.com/9781032171326

2ND EDITION

Longitudinal Structural Equation Modeling

A Comprehensive Introduction



Jason T. Newsom Portland State University, USA

Series: Multivariate Applications Series

Longitudinal Structural Equation Modeling, Second Edition provides an in-depth, comprehensive overview of structural equation modeling (SEM) strategies for longitudinal data to help readers see which modeling options are available for which hypotheses. Ideal for graduate courses on longitudinal (data) analysis, advanced SEM, longitudinal SEM, and/or advanced data (quantitative) analysis taught in the behavioral, social, and health sciences, Longitudinal Structural Equation Modeling, Second Edition, also appeals to researchers in these fields, and the first edition has been popular as a standard reference for this type of analysis.

Routledge
October 2023 : 522pp
Pb: 978-1-032-20286-0 : **£78.99**
Hb: 978-1-032-20283-9 : **£155**
eBook: 978-1-003-26303-6

* For full contents and more information, visit: www.routledge.com/9781032202860

3RD EDITION

Multilevel and Longitudinal Modeling with IBM SPSS



Ronald H. Heck University of Hawaii, Manoa, **Scott L. Thomas** University of Vermont, USA, **Lynn Tabata** University of Hawaii, Manoa

Series: Quantitative Methodology Series

This text demonstrates how to use the multilevel- and longitudinal-modeling techniques available in IBM SPSS (Version 26). Adopting a workbook format, the text walks readers through setting up, running, and interpreting a variety of different types of multilevel and longitudinal models using the linear mixed-effects model (MIXED and GENLIMIXED) platforms in SPSS. This text is an essential resource for graduate students taking courses on multilevel, longitudinal, and latent variable modeling, multivariate statistics, or advanced quantitative techniques.

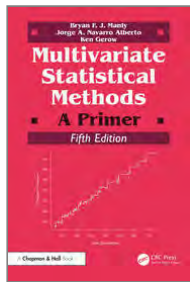
Routledge
April 2022 : 494pp
Pb: 978-0-367-42461-9 : **£52.99**
Hb: 978-0-367-42460-2 : **£185**
eBook: 978-0-367-82427-3

* For full contents and more information, visit: www.routledge.com/9780367424619

5TH EDITION

Multivariate Statistical Methods

A Primer



Bryan F. J. Manly University of Otago, Dunedin, New Zealand, **Jorge A. Navarro Alberto**, **Ken Gerow**

Great starting point for readers looking to become proficient in multivariate statistical methods, but who might not be deeply versed in the language of mathematics. In this edition, we provide readers with conceptual introductions to methods, practical suggestions, new references, and a more extensive collection of R functions and code that will help them to deepen their toolkit of multivariate statistical methods.

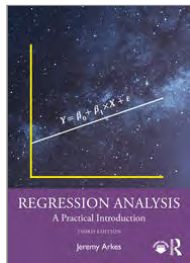
Chapman & Hall
October 2024 : 294pp
Pb: 978-1-032-59197-1 : **£55.99**
Hb: 978-1-032-59200-8 : **£160**
eBook: 978-1-003-45348-2

* For full contents and more information, visit: www.routledge.com/9781032591971

3RD EDITION

Regression Analysis

A Practical Introduction



Jeremy Arkes

This thoroughly practical and engaging textbook conveys the skills needed to responsibly develop, conduct, scrutinize, and interpret statistical analyses without requiring high-level math. This third edition features coverage of the Generalized AutoRegressive Conditional Heteroskedasticity (GARCh) model, Time Series Cross Section models and Multi-level (Hierarchical) models, and has been updated throughout to include more examples. It is ideal for undergraduate and postgraduate students learning quantitative methods in the social sciences, business, medicine, and data analytics. It will also appeal to researchers and academics looking to better understand regressions.

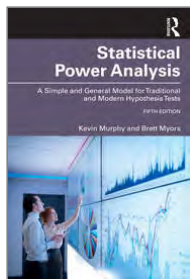
Routledge
September 2025 : 524pp
Pb: 978-1-041-00259-8 : **£41.99**
Hb: 978-1-041-00260-4 : **£130**
eBook: 978-1-003-60894-3

* For full contents and more information, visit: www.routledge.com/9781041002598

5TH EDITION

Statistical Power Analysis

A Simple and General Model for Traditional and Modern Hypothesis Tests, Fifth Edition



Brett Myors Griffith University, Australia, **Kevin R. Murphy** University of Limerick, Ireland

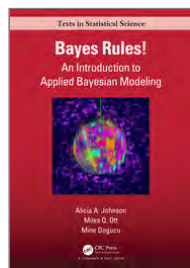
Statistical Power Analysis explains the key concepts in statistical power analysis and illustrates their application in both tests of traditional null hypotheses. It provides readers with the tools to understand and perform power analyses for virtually all the statistical methods used in the social and behavioral sciences. This edition includes new material and new power software. The programs used for power analysis in this book have been re-written in R, a language that is widely used and freely available. Statistical Power Analysis helps readers design studies, diagnose existing studies, and understand why hypothesis tests come out the way they do.

Routledge
March 2023 : 224pp
Pb: 978-1-032-28300-5 : **£57.99**
Hb: 978-1-032-28301-2 : **£140**
eBook: 978-1-003-29622-5

* For full contents and more information, visit: www.routledge.com/9781032283005

Bayes Rules!

An Introduction to Applied Bayesian Modeling



Alicia A. Johnson, **Miles Q. Ott** Smith College,
Northampton, MA 01063, **Mine Dogucu** Denison
university, OH, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

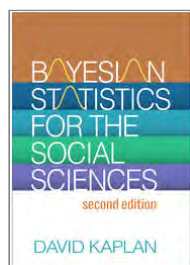
An engaging, sophisticated, and fun introduction to the field of Bayesian Statistics, *Bayes Rules! An Introduction to Bayesian Modeling with R* brings the power of modern Bayesian thinking, modeling, and computing to a broad audience. In particular, it is an ideal resource for advanced undergraduate Statistics students and practitioners with comparable experience. *Bayes Rules!* empowers readers to weave Bayesian approaches into their everyday practice.

Chapman & Hall
March 2022 : 544pp
Pb: 978-0-367-25539-8 : **£69.99**
Hb: 978-1-032-19159-1 : **£195**
eBook: 978-0-429-28834-0

* For full contents and more information, visit: www.routledge.com/9780367255398

2ND EDITION

Bayesian Statistics for the Social Sciences, Second Edition



David Kaplan University of Wisconsin–Madison, United States

This book equips social science researchers to apply the latest Bayesian methodologies to their data analysis problems. The second edition includes new chapters on model uncertainty, Bayesian variable selection and sparsity, and Bayesian workflow for statistical modeling, and emphasizes use of the RStan software package. Topics include frequentist and epistemic probability, prior distributions, Hamiltonian Monte Carlo, Bayesian linear regression and generalized linear models, model evaluation and comparison, multilevel modeling, missing data, and more. The book includes worked-through examples with annotated RStan code, and features a helpful companion website.

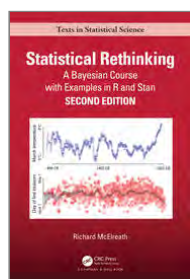
Guilford Press
December 2023 : 250pp
Hb: 978-1-462-55354-9 : **£62.99**

* For full contents and more information, visit: www.routledge.com/9781462553549

2ND EDITION

Statistical Rethinking

A Bayesian Course with Examples in R and STAN



Richard McElreath Max Planck Institute for Evolutionary
Anthropology, Leipzig, Germany

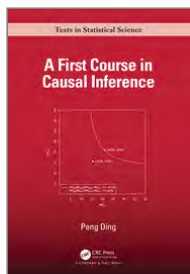
Series: Chapman & Hall/CRC Texts in Statistical Science

The very popular *Statistical Rethinking: A Bayesian Course with Examples in R and Stan*, Second Edition builds readers' knowledge of and confidence in statistical modeling. Reflecting the need for even minor programming in today's model-based statistics, the book pushes readers to perform step-by-step calculations that are usually automated. This unique computational approach ensures that readers understand enough of the details to make reasonable choices and interpretations in their own modeling work.

Chapman & Hall
March 2020 : 612pp
Hb: 978-0-367-13991-9 : **£86.99**
eBook: 978-0-429-02960-8

* For full contents and more information, visit: www.routledge.com/9780367139919

A First Course in Causal Inference



Peng Ding University of California Berkeley, U.S.A

Series: *Chapman & Hall/CRC Texts in Statistical Science*

This textbook, based on the author's course on causal inference at UC Berkeley taught over the past seven years, only requires basic knowledge of probability theory, statistical inference, and linear and logistic regressions. It assumes minimal knowledge of causal inference, and reviews basic probability and statistics in the appendix. It covers causal inference from a statistical perspective and includes examples and applications from biostatistics and econometrics. This book is suitable for an advanced undergraduate or graduate-level course on causal inference, or postgraduate and PhD-level course in statistics and biostatistics departments.

Chapman & Hall
July 2024 : 448pp
Hb: 978-1-032-75862-6 : **£68.99**
eBook: 978-1-003-48408-0

* For full contents and more information, visit: www.routledge.com/9781032758626

2ND EDITION

The Effect

An Introduction to Research Design and Causality



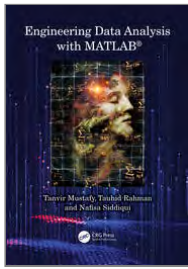
Nick Huntington-Klein

This book is about research design, specifically concerning research that uses non-experimental data to figure out whether one thing causes another. It introduces the concept of identification thoroughly and clearly and discusses it as a process of trying to isolate variation that has a causal interpretation. Concepts are demonstrated with a heavy emphasis on graphical intuition and the question of what we do to data. When we "add a control variable" what does that actually do? The second edition features a new chapter on partial identification, updated materials, methods, and writing throughout, and additional materials for help navigating the book or in using the book in teaching.

Chapman & Hall
July 2025 : 686pp
Pb: 978-1-032-58022-7 : **£41.99**
Hb: 978-1-032-58194-1 : **£130**
eBook: 978-1-003-44896-9

* For full contents and more information, visit: www.routledge.com/9781032580227

Engineering Data Analysis with MATLAB®



Tanvir Mustafy Military Inst. of Science and Tech, BD,
Tauhid Rahman Military Inst. of Science and Tech, BD,
Nafisa Siddiqui Military Inst. of Science and Tech, BD

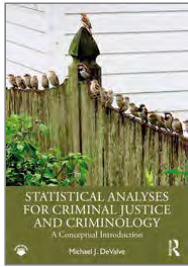
This book provides a concise overview of a variety of techniques for analyzing statistical, scientific, and financial data, using MATLAB® to integrate several approaches to data analysis and statistics. Chapters offer a broad review of computational data analysis, illustrated with many examples and applications. Each chapter combines theoretical concepts with practical MATLAB® applications and includes practice exercises, ensuring a comprehensive understanding of the material. With coverage of both basic and more complex ideas in applied statistics, the book has broad appeal for undergraduate students up to practicing engineers.

CRC Press
December 2024 : 902pp
Pb: 978-1-032-50771-2 : **£75.99**
Hb: 978-1-032-50658-6 : **£155**
eBook: 978-1-003-39958-2

* For full contents and more information, visit: www.routledge.com/9781032507712

Statistical Analyses for Criminal Justice and Criminology

A Conceptual Introduction



Michael J. DeValve

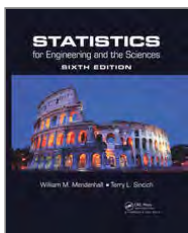
This book is a how-to guide for statistical analyses designed for undergraduates and others new to the subject. Written in an easy-going and clear style, the book uses policing data to illustrate concepts and includes a short narrative at the beginning of each chapter to engage readers. Easily identified Main Take-Aways and Key Terms features aid student understanding. Designed to combat the fear of mathematics and statistics often held by students in the social sciences, plain verbiage, multiple examples, and clear demonstrations combine to achieve the actualization and proper contextualized use of univariate and bivariate statistics.

Routledge
June 2024 : 194pp
Pb: 978-1-032-63854-6 : **£39.99**
Hb: 978-1-032-63858-4 : **£155**
eBook: 978-1-032-63859-1

* For full contents and more information, visit: www.routledge.com/9781032638546

6TH EDITION

Statistics for Engineering and the Sciences



William M. Mendenhall , Terry L. Sincich

Designed for a two-semester introductory course, this popular text continues to teach students the basic concepts of data description and statistical inference as well as the statistical methods necessary for real-world applications. Along with updated and reorganized material, this sixth edition includes many new and updated exercises based on contemporary engineering and scientific-related studies and real data. It also offers more statistical software printouts and corresponding instructions for use that reflect the latest versions of the SAS, SPSS, and MINITAB software.

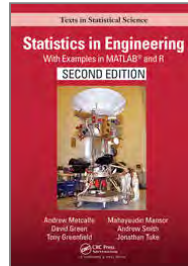
Chapman & Hall
December 2015 : 1182pp
Hb: 978-1-498-72885-0 : **£94.99**
eBook: 978-0-429-07627-5

* For full contents and more information, visit: www.routledge.com/9781498728850

2ND EDITION

Statistics in Engineering

With Examples in MATLAB® and R, Second Edition



Andrew Metcalfe , David Green , Tony Greenfield , Mayhayaudin Mansor , Andrew Smith , Jonathan Tuke

This is a textbook for an undergraduate course in statistics for engineers with a minimal calculus prerequisite. The second edition differs from existing books in three main aspects: it is the only introductory statistics textbook written for engineers that uses R throughout the text, there is an emphasis on statistical methods most relevant to engineers that are illustrated with practical applications, and there is an emphasis on random number generation and simulation, all very useful features in engineering.

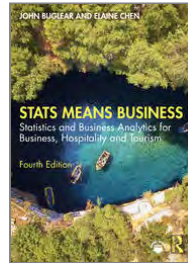
Chapman & Hall
June 2020 : 810pp
Pb: 978-0-367-57062-0 : **£51.99**
Hb: 978-1-439-89547-4 : **£96.99**
eBook: 978-1-315-11723-2

* For full contents and more information, visit: www.routledge.com/9780367570620

4TH EDITION

Stats Means Business

Statistics and Business Analytics for Business, Hospitality and Tourism



John Buglear , Elaine Chen

Stats Means Business is an introductory and comprehensive textbook written especially for Hospitality, Business and Tourism students who take statistics or quantitative methods modules. By minimising technical language, providing clear definitions of key terms and giving emphasis to interpretation rather than technique, this book caters to beginners in the subject. Stats Means Business is an ideal, accessible and practical introduction to statistics and quantitative research methods for Hospitality, Business and Tourism students.

Routledge
April 2025 : 456pp
Pb: 978-1-032-75021-7 : **£60.99**
Hb: 978-1-032-75018-7 : **£155**
eBook: 978-1-003-47202-5

* For full contents and more information, visit: www.routledge.com/9781032750217

A Tour of Data Science

Learn R and Python in Parallel



Nailong Zhang

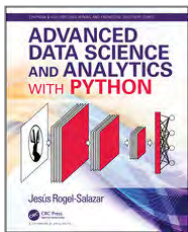
Series: *Chapman & Hall/CRC Data Science Series*

This book covers the fundamentals of data science, including programming, statistics, optimization, and machine learning in a single and short book. It does not cover everything, but instead, teaches the key concepts and topics. It also covers two of the most popular programming languages used in Data Science, R and Python, in one source.

Chapman & Hall
November 2020 : 216pp
Pb: 978-0-367-89586-0 : **£52.99**
Hb: 978-0-367-89706-2 : **£145**
eBook: 978-1-003-02064-6

* For full contents and more information, visit: www.routledge.com/9780367895860

Advanced Data Science and Analytics with Python



Jesús Rogel-Salazar Imperial College London, UK

Series: *Chapman & Hall/CRC Data Mining and Knowledge Discovery Series*

The book is intended for practitioners in data science and data analytics in both academic and business environments. It aims to present the reader with concepts in data science and analytics that were deemed to be more advanced or simply out of scope in the author's first book, and are used in data analytics using tools developed in Python such as SciKit Learn, Pandas, Numpy, etc. The use of Python is of particular benefit given its recent popularity in the data science community. The book is therefore a reference to be used by seasoned programmers and newcomers alike and the key benefit is the practical approach presented throughout the book.

Chapman & Hall
May 2020 : 424pp
Pb: 978-1-138-31506-8 : **£51.99**
Hb: 978-0-429-44661-0 : **£115**
eBook: 978-0-429-44664-1

* For full contents and more information, visit: www.routledge.com/9781138315068

2ND EDITION

Big Data and Social Science

Data Science Methods and Tools for Research and Practice



Edited by **Ian Foster** University of Chicago, Illinois, USA, **Rayid Ghani** University of Chicago, Illinois, USA, **Ron S. Jarmin**, **Frauke Kreuter** University of Mannheim, Germany; and Institute for Employment Research, Germany, **Julia Lane** New York University; American Institutes for Research, USA

Series: *Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences*

This classroom-tested book fills a major gap in graduate- and professional-level data science and social science education. It can be used to train a new generation of social data scientists to tackle real-world problems and improve the skills and competencies of applied social scientists and public policy practitioners. It empowers you to use the massive and rapidly growing amounts of available data to interpret economic and social activities in a scientific and rigorous manner.

Chapman & Hall
November 2020 : 412pp
Pb: 978-0-367-56859-7 : **£60.99**
Hb: 978-0-367-34187-9 : **£155**
eBook: 978-0-429-32438-3

* For full contents and more information, visit: www.routledge.com/9780367568597

2ND EDITION

Data Science and Analytics with Python



Jesús Rogel-Salazar Imperial College London, UK

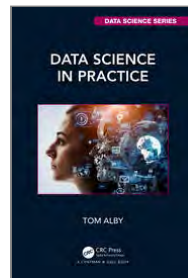
Series: *Chapman & Hall/CRC Data Mining and Knowledge Discovery Series*

Since the first edition, we have witnessed an unprecedented explosion in the interest and development within the fields of Artificial Intelligence and Machine Learning. This surge has led to the widespread adoption of the book, not just among business practitioners, but also by universities as a key textbook. Designed as a practical companion for data analysts and budding data scientists, this book assumes a working knowledge of programming and statistical modelling but aims to guide readers deeper into the wonders of data analytics and machine learning. Whether revisiting fundamental concepts or diving into new, advanced topics, this book offers something valuable for every reader.

Chapman & Hall
June 2025 : 514pp
Pb: 978-1-032-77249-3 : **£51.99**
Hb: 978-1-032-77252-3 : **£140**
eBook: 978-1-003-48206-2

* For full contents and more information, visit: www.routledge.com/9781032772493

Data Science in Practice



Tom Alby

Series: *Chapman & Hall/CRC Data Science Series*

Data Science in Practice is the ideal introduction to data science. With or without math skills: Here you get the all-round view that you need for your projects. This book describes how to properly question data, to unearth the treasure that data can be. As technology alone is not enough, this book also deals with problems in project implementation, illuminates various fields of application and addresses ethical aspects. Data Science in Practice includes many examples, notes on errors, decision-making aids and other practical tips, and is ideal as a complementary text for university students, or as a useful learning tool for those starting more data-related roles.

Chapman & Hall
September 2023 : 318pp
Pb: 978-1-032-50526-8 : **£61.99**
Hb: 978-1-032-50524-4 : **£160**
eBook: 978-1-003-42636-3

* For full contents and more information, visit: www.routledge.com/9781032505268

Data Science

A First Introduction



Tiffany Timbers University of British Columbia, **Trevor Campbell**, **Melissa Lee**

Series: *Chapman & Hall/CRC Data Science Series*

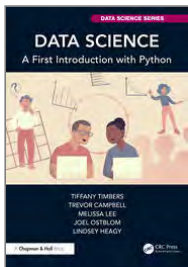
Data Science: A First Introduction focuses on using the R programming language in Jupyter notebooks to perform data manipulation and cleaning, create effective visualizations, and extract insights from data using classification, regression, clustering, and inference. The text emphasizes workflows that are clear, reproducible, and shareable, and includes coverage of the basics of version control. All source code is available online, demonstrating the use of good reproducible project workflows.

Chapman & Hall
July 2022 : 456pp
Pb: 978-0-367-52468-5 : **£55.99**
Hb: 978-0-367-53217-8 : **£140**
eBook: 978-1-003-08097-8

* For full contents and more information, visit: www.routledge.com/9780367524685

Data Science

A First Introduction with Python



Tiffany Timbers University of British Columbia, **Trevor Campbell**, **Melissa Lee** Assistant Professor, Uni of British Columbia, Canada, **Joel Ostblom**, **Lindsey Heagy** Professor, Uni of British Columbia, Canada

Series: *Chapman & Hall/CRC Data Science Series*

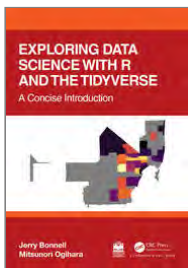
This book focuses on using the Python programming language in Jupyter notebooks to perform data manipulation and cleaning, create effective visualizations, and extract insights from data using classification, regression, clustering, and inference. The text emphasizes workflows that are clear, reproducible, and shareable, and includes coverage of the basics of version control. All source code is available online, demonstrating the use of good reproducible project workflows. The book is designed for learners from all disciplines with minimal prior knowledge of mathematics and programming. The authors have honed the material through years of experience teaching.

Chapman & Hall
August 2024 : 452pp
Pb: 978-1-032-57223-9 : **£61.99**
Hb: 978-1-032-57219-2 : **£160**
eBook: 978-1-003-43839-7

* For full contents and more information, visit: www.routledge.com/9781032572239

Exploring Data Science with R and the Tidyverse

A Concise Introduction



Jerry Bonnell, **Mitsunori Ogihara** University of Miami, Coral Gables, Florida, USA

This book introduces the reader to data science using R and the tidyverse. No prerequisite knowledge is needed in college-level programming or mathematics (e.g., calculus or statistics). The book is self-contained so readers can immediately begin building data science workflows without needing to reference extensive amounts of external resources for onboarding. The contents are targeted for undergraduate students but are equally applicable to students at the graduate level and beyond. The book develops concepts using many real-world examples to motivate the reader. An exercise set is made available and designed for compatibility with automated grading tools for instructor use.

Chapman & Hall
August 2023 : 492pp
Pb: 978-1-032-34170-5 : **£80.99**
Hb: 978-1-032-32950-5 : **£205**
eBook: 978-1-003-32084-5

* For full contents and more information, visit: www.routledge.com/9781032341705

Foundations of Data Science with Python



John M. Shea

Series: *Chapman & Hall/CRC The Python Series*

Foundations of Data Science with Python introduces readers to the fundamentals of data science, including data manipulation and visualization, probability, statistics, and dimensionality reduction. This book is targeted toward engineers and scientists, but it should be readily understandable to anyone who knows basic calculus and the essentials of computer programming. This book can be used as an undergraduate textbook for an Introduction to Data Science course or to provide a more contemporary approach in courses like Engineering Statistics. It is also intended to be accessible to practicing engineers and scientists

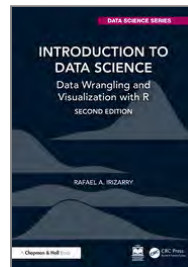
Chapman & Hall
February 2024 : 496pp
Pb: 978-1-032-35042-4 : **£77.99**
Hb: 978-1-032-34674-8 : **£200**
eBook: 978-1-003-32499-7

* For full contents and more information, visit: www.routledge.com/9781032350424

2ND EDITION

Introduction to Data Science

Data Wrangling and Visualization with R



Rafael A. Irizarry

Series: *Chapman & Hall/CRC Data Science Series*

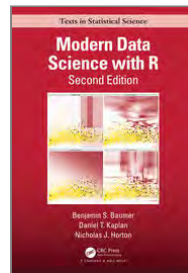
Thoroughly revised and updated, this is the first book of the second edition of Introduction to Data Science: Data Wrangling and Visualization with R. It introduces skills that can help you tackle real-world data analysis challenges. No previous knowledge of R is necessary, although some experience with programming may be helpful. If you read and understand all the chapters and complete all the exercises in this book, and understand statistical concepts, you will be well-positioned to perform basic data analysis tasks and you will be prepared to learn the more advanced concepts and skills needed to become an expert.

Chapman & Hall
August 2024 : 346pp
Hb: 978-1-032-11655-6 : **£62.99**
eBook: 978-1-003-22092-3

* For full contents and more information, visit: www.routledge.com/9781032116556

2ND EDITION

Modern Data Science with R



Benjamin S. Baumer Smith College, Northampton, MA, **Daniel T. Kaplan** Smith College, Northampton, MA, **Nicholas J. Horton** Amherst College, Amherst, MA

Series: *Chapman & Hall/CRC Texts in Statistical Science*

New data technologies and database systems facilitate scraping data and merging information from different sources and formats and restructuring data into a form suitable for analysis. State-of-the-art workflow and tools foster well-documented and reproducible analysis. Modern statistical methods allow the analyst to fit and assess models as well as to undertake supervised or unsupervised learning to extract information. Contemporary data science requires tight integration of these statistics, computing, data skills, mathematics, and communication. The text is intended for readers with some background in statistics and modest prior experience in scripting and programming.

Chapman & Hall
April 2021 : 650pp
Hb: 978-0-367-19149-8 : **£94.99**
eBook: 978-0-429-20071-7

* For full contents and more information, visit: www.routledge.com/9780367191498

Practitioner's Guide to Data Science



Hui Lin, **Ming Li**

Series: *Chapman & Hall/CRC Data Science Series*

This book aims to increase the visibility of data science in real-world, which differs from what you learn from a typical textbook. Many aspects of day-to-day data science work are almost absent from conventional statistics, machine learning, and data science curriculum. This book is for readers who want to explore possible career paths and eventually become data scientists. This book comprehensively introduces various data science fields, and programming skills in data science projects. Traditional data-related practitioners such as statisticians, business analysts, and data analysts will find this book helpful in expanding their skills for future data science careers.

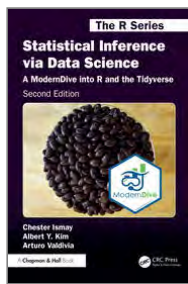
Chapman & Hall
May 2023 : 402pp
Pb: 978-0-815-35439-0 : **£57.99**
Hb: 978-0-815-35447-5 : **£155**
eBook: 978-1-351-13291-6

* For full contents and more information, visit: www.routledge.com/9780815354390

2ND EDITION

Statistical Inference via Data Science

A ModernDive into R and the Tidyverse



Chester Ismay DataCamp, **Albert Y. Kim**, **Arturo Valdivia**

Series: *Chapman & Hall/CRC The R Series*

Offers a comprehensive guide to learning statistical inference with data science tools widely used in industry, academia, and government. Ideal for those new to statistics or looking to deepen their knowledge, this edition provides a clear entry point into data science and modern statistical methods.

Chapman & Hall
May 2025 : 490pp
Pb: 978-1-032-70837-9 : **£68.99**
Hb: 978-1-032-72451-5 : **£170**
eBook: 978-1-032-72454-6

* For **full contents** and more information, visit: www.routledge.com/9781032708379

Telling Stories with Data

With Applications in R



Rohan Alexander

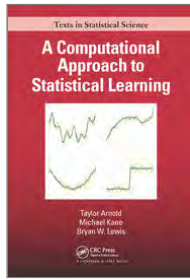
Series: *Chapman & Hall/CRC Data Science Series*

The book equips students with the end-to-end skills needed to do data science. That means gathering, cleaning, preparing, and sharing data, then using statistical models to analyse data, writing about the results of those models, drawing conclusions from them, and finally, using the cloud to put a model into production, all done in a reproducible way. This book will achieve the goals by working through extensive case studies in terms of gathering and preparing data, and integrating ethics throughout. It is specifically designed around teaching how to write about the data and models, so aspects such as writing are explicitly covered.

Chapman & Hall
July 2023 : 622pp
Hb: 978-1-032-13477-2 : **£83.99**
eBook: 978-1-003-22940-7

* For **full contents** and more information, visit: www.routledge.com/9781032134772

A Computational Approach to Statistical Learning



Taylor Arnold , Michael Kane , Bryan W. Lewis

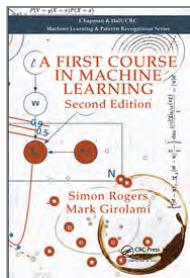
This book synthesizes those techniques from numerical analysis, algorithms, data structures, and optimization theory most commonly employed in statistics and machine learning. We provide concrete applications of these methods by giving complete reference implementations for a large set of the most commonly used statistical estimators. The goal is to provide a self-contained textbook explaining the inner algorithmic workings of statistical estimators.

Chapman & Hall
June 2020 : 374pp
Pb: 978-0-367-57061-3 : **£51.99**
Hb: 978-1-138-04637-5 : **£86.99**
eBook: 978-1-315-17140-1

* For full contents and more information, visit: www.routledge.com/9780367570613

2ND EDITION

A First Course in Machine Learning



Simon Rogers , Mark Girolami

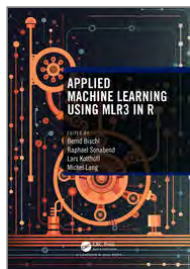
Series: Chapman & Hall/CRC Machine Learning & Pattern Recognition

The new edition of this popular, undergraduate textbook has been revised and updated to reflect current growth areas in Machine Learning. The new edition includes three new chapters with more detailed discussion of Markov Chain Monte Carlo techniques, Classification and Regression with Gaussian Processes, and Dirichlet Process models. Previous chapters have also been updated to reflect new developments in Machine Learning, and correct any previous errors in the text.

Chapman & Hall
June 2020 : 428pp
Pb: 978-0-367-57464-2 : **£45.99**
Hb: 978-1-498-73848-4 : **£72.99**
eBook: 978-1-315-38215-9

* For full contents and more information, visit: www.routledge.com/9780367574642

Applied Machine Learning Using mlr3 in R



Edited by **Bernd Bischl , Raphael Sonabend , Lars Kotthoff , Michel Lang**

mlr3 is an award-winning ecosystem of R packages that have been developed to enable state-of-the-art machine learning capabilities in R. This book gives an overview of flexible and robust machine learning methods, with an emphasis on how to implement them using mlr3 in R. It covers many key topics, including basic machine learning tasks, such as building and evaluating a predictive model; hyperparameter tuning of machine learning approaches to obtain peak performance; building machine learning pipelines that perform complex operations

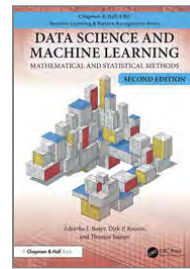
Chapman & Hall
January 2024 : 356pp
Pb: 978-1-032-50754-5 : **£67.99**
Hb: 978-1-032-51567-0 : **£175**
eBook: 978-1-003-40284-8

* For full contents and more information, visit: www.routledge.com/9781032507545

2ND EDITION

Data Science and Machine Learning

Mathematical and Statistical Methods, Second Edition



Zdravko Botev University of New South Wales, **Dirk P. Kroese** , **Thomas Taimre**

Series: Chapman & Hall/CRC Machine Learning & Pattern Recognition

The purpose of Data Science and Machine Learning: Mathematical and Statistical Methods is to provide an accessible, yet comprehensive textbook intended for students interested in gaining a better understanding of the mathematics and statistics that underpin the rich variety of ideas and machine learning algorithms in data science. This expanded second edition provides updates across key areas of statistical learning.

Chapman & Hall
November 2025 : 758pp
Hb: 978-1-032-48868-4 : **£78.99**
eBook: 978-1-003-39117-3

* For full contents and more information, visit: www.routledge.com/9781032488684

Deep Learning for Engineers



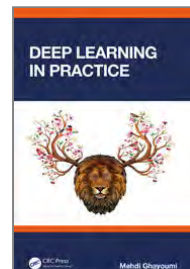
Tariq M. Arif Weber State University Ogden, UT, **Md Adilur Rahim** Louisiana State University Baton Rouge, LA

As a comprehensive guideline for applying deep learning models in practical settings, this book features an easy-to-understand coding structure using Python and PyTorch with an in-depth explanation of four typical deep learning case studies on image classification, object detection, semantic segmentation, and image captioning. Science and engineering students, academic researchers, and industry professionals will find the contents useful.

Chapman & Hall
February 2024 : 170pp
Pb: 978-1-032-51581-6 : **£52.99**
Hb: 978-1-032-50473-5 : **£94.99**
eBook: 978-1-003-40292-3

* For full contents and more information, visit: www.routledge.com/9781032515816

Deep Learning in Practice



Mehdi Ghayoumi University of San Diego

Deep Learning in Practice helps you learn how to develop and optimize a model for your projects using Deep Learning (DL) methods and architectures. This book is useful for undergraduate and graduate students, as well as practitioners in industry and academia. It will serve as a useful reference for learning deep learning fundamentals and implementing a deep learning model for any project, step by step.

Chapman & Hall
June 2025 : 218pp
Pb: 978-0-367-45658-0 : **£44.99**
Hb: 978-0-367-45862-1 : **£82.99**
eBook: 978-1-003-02581-8

* For full contents and more information, visit: www.routledge.com/9780367456580

2ND EDITION

Introduction to Machine Learning with Applications in Information Security



Mark Stamp Department of Computer Science, San Jose State University

Series: *Chapman & Hall/CRC Machine Learning & Pattern Recognition*

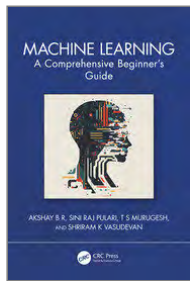
Introduction to Machine Learning with Applications in Information Security, Second Edition provides a classroom-tested introduction to a wide variety of machine learning and deep learning algorithms and techniques, reinforced with realistic applications. The book is accessible and doesn't prove theorems, or dwell on mathematical theory. The goal is to present topics at an intuitive level, with just enough detail to clarify the underlying concepts. The applications presented serve to demystify the topics by illustrating the use of various learning techniques in straightforward scenarios.

Chapman & Hall
December 2024 : 548pp
Pb: 978-1-032-20717-9 : **£47.99**
Hb: 978-1-032-20492-5 : **£70.99**
eBook: 978-1-003-26487-3

* For full contents and more information, visit: www.routledge.com/9781032207179

Machine Learning

A Comprehensive Beginner's Guide



Akshay B R, **Sini Raj Pulari**, **T.S. Murugesh** Govt. College of Engineering Srirangam, Tamil Nadu, **Shriram K. Vasudevan** Intel India Pvt Ltd., Tamil Nadu

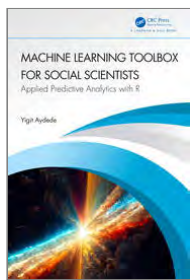
Machine learning is a dynamic and rapidly expanding field focused on creating algorithms that empower computers to recognize patterns, make predictions, and continually enhance performance. Dive into this fascinating field to master machine learning concepts with the step-by-step approach outlined in this book and contribute to its exciting future.

CRC Press
July 2024 : 258pp
Pb: 978-1-032-67666-1 : **£50.99**
Hb: 978-1-032-67665-4 : **£135**
eBook: 978-1-032-67668-5

* For full contents and more information, visit: www.routledge.com/9781032676661

Machine Learning Toolbox for Social Scientists

Applied Predictive Analytics with R



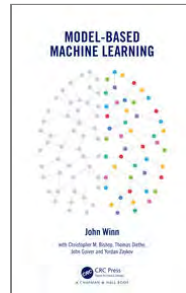
Yigit Aydede Professor, Saint Mary's University

Machine Learning Toolbox for Social Scientists covers predictive methods with complementary statistical "tools" that make it mostly self-contained. The inferential statistics is the traditional framework for most data analytics courses in social science and business fields, especially in Economics and Finance. The new organization that this book offers goes beyond standard machine learning code applications, providing intuitive backgrounds for new predictive methods that social science and business students can follow. The modern statistical methods the book provides allows it to be effectively used in teaching in the social science and business fields.

Chapman & Hall
September 2023 : 600pp
Hb: 978-1-032-46395-7 : **£86.99**
eBook: 978-1-003-38150-1

* For full contents and more information, visit: www.routledge.com/9781032463957

Model-Based Machine Learning



John Winn Microsoft Research Ltd., Cambridge, United Kingdom

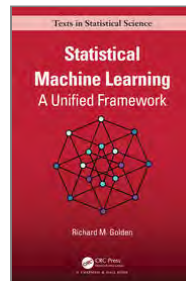
Machine learning is being applied to a growing variety of problems in a variety of domains. A fundamental challenge when using machine learning is connecting the abstract mathematics of a machine learning technique to real world problems. This book tackles this through model-based machine learning, focusing on understanding the assumptions encoded in a machine learning system and their impact on the behaviour of the system. The key ideas of model-based machine learning are introduced through case studies involving real-world applications. It aims not just to explain machine learning methods, but also how to create, debug, and evolve them to solve a problem.

Chapman & Hall
October 2023 : 468pp
Hb: 978-1-498-75681-5 : **£75.99**
eBook: 978-0-429-19268-5

* For full contents and more information, visit: www.routledge.com/9781498756815

Statistical Machine Learning

A Unified Framework



Richard Golden

Series: *Chapman & Hall/CRC Texts in Statistical Science*

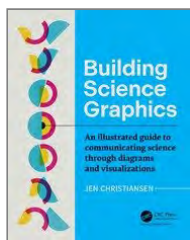
For advanced undergraduate students, graduate students, and professional. Presents a wide range of popular, disparate, and diverse machine learning algorithms within a unified theoretical framework, characterized by a collection of carefully chosen theorems from the fields of nonlinear optimization theory and mathematical statistics which respectively characterize both asymptotic behavior and generalization performance. The purpose is to teach students how to confidently apply these theorems in practice. The only required mathematical prerequisites are lower-division linear algebra, lower-division calculus, and an upper-division calculus-based course in probability theory.

Chapman & Hall
July 2020 : 524pp
Hb: 978-1-138-48469-6 : **£125**
eBook: 978-1-351-05150-7

* For full contents and more information, visit: www.routledge.com/9781138484696

Building Science Graphics

An Illustrated Guide to Communicating Science through Diagrams and Visualizations



Jen Christiansen

Series: *AK Peters Visualization Series*

Building Science Graphics is a practical guide for anyone interested in creating science-centric illustrated explanatory diagrams. Starting with a clear introduction to the concept of information graphics and their role in contemporary science communication, it then outlines a process for creating graphics using evidence-based design strategies. The heart of the book is composed of two step-by-step graphical worksheets, designed to help jump-start any new project.

A K Peters/CRC Press
August 2022 : 357pp
Pb: 978-1-032-10674-8 : **£44.99**
Hb: 978-1-032-10940-4 : **£105**
eBook: 978-1-003-21781-7

* For full contents and more information, visit: www.routledge.com/9781032106748

CHART

Designing Creative Data Visualizations from Charts to Art



Nadieh Bremer

Series: *AK Peters Visualization Series*

CHART is a guide to unleashing creativity in data visualization. It takes you on a journey along the spectrum from an ordinary chart to data art, packed with ways to bring more creativity into any visualization. It will help to make your visuals more compelling and memorable, long after the numbers have been crunched. The author shares thirteen hands-on, tool-agnostic lessons, each filled with actionable insights and unique perspectives. Between these core lessons, you'll find tips, mini-chapters, and dozens of real-world examples from both client and personal projects. Designed for journalists, data analysts, business professionals, and newcomers alike.

A K Peters/CRC Press
June 2025 : 284pp
Hb: 978-1-032-79775-5 : **£37.99**
eBook: 978-1-003-49780-6

* For full contents and more information, visit: www.routledge.com/9781032797755

Data Sketches

A journey of imagination, exploration, and beautiful data visualizations



Nadieh Bremer, Shirley Wu

Series: *AK Peters Visualization Series*

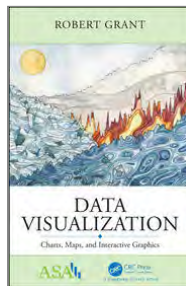
In *Data Sketches*, Nadieh Bremer and Shirley Wu document the creative and collaborative process behind 24 unique data visualization projects, spanning different topics, technologies, and forms. Features: Technical write-ups with beginner-friendly explanations of core concepts; Practical lessons on data and design challenges; Full-color; Interview with Tamara Munzner; Foreword by Alberto Cairo. This book is perfect for anyone interested or working in data visualization and information design, especially those who want to take their work to the next level and are inspired by unique and compelling data-driven storytelling.

A K Peters/CRC Press
February 2021 : 428pp
Pb: 978-0-367-00008-0 : **£41.99**
Hb: 978-0-367-00012-7 : **£115**
eBook: 978-0-429-44501-9

* For full contents and more information, visit: www.routledge.com/9780367000080

Data Visualization

Charts, Maps, and Interactive Graphics



Robert Grant Kingston University & St George's, University of London

Series: *ASA-CRC Series on Statistical Reasoning in Science and Society*

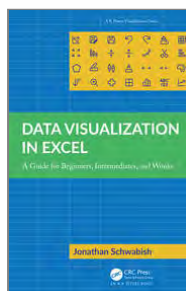
This is the age of data. There are more innovations and more opportunities for interesting work with data than ever before, but there is also an overwhelming amount of quantitative information being published every day. Data visualisation has become big business, because communication is the difference between success and failure, no matter how clever the analysis may have been. The ability to visualize data is now a skill in demand across business, government, NGOs and academia. *Data Visualization: Charts, Maps, and Interactive Graphics* gives an overview of a wide range of techniques and challenges, while staying accessible to anyone interested in working with and understanding data.

Chapman & Hall
December 2018 : 248pp
Pb: 978-1-138-70760-3 : **£24.99**
Hb: 978-1-138-55359-0 : **£89.99**
eBook: 978-1-315-20135-1

* For full contents and more information, visit: www.routledge.com/9781138707603

Data Visualization in Excel

A Guide for Beginners, Intermediates, and Wonks



Jonathan Schwabish

Series: *AK Peters Visualization Series*

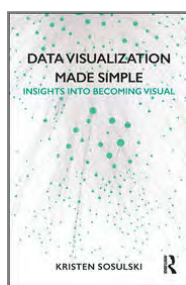
Data Visualization in Excel closes the gap between what people think Excel can do and what they can achieve in the tool. Over the past few years, recognition of the importance of effectively visualizing data has led to an explosion data analysis and visualization software tools. But for many people, Microsoft Excel continues to be the workhorse for their data visualization needs, not to mention the only tool that many data workers have access to. This book is the perfect guide for anyone who wants to create better, more effective, and more engaging data visualizations.

A K Peters/CRC Press
May 2023 : 400pp
Pb: 978-1-032-34326-6 : **£26.99**
Hb: 978-1-032-34328-0 : **£81.99**
eBook: 978-1-032-48782-3 : **£22.99**

* For full contents and more information, visit: www.routledge.com/9781032343266

Data Visualization Made Simple

Insights into Becoming Visual



Kristen Sosulski New York University, USA

Data Visualization Made Simple is a practical guide to the fundamentals, strategies, and real-world cases for data visualization, an essential skill required in today's information-rich world. With foundations rooted in statistics, psychology, and computer science, data visualization offers practitioners in almost every field a coherent way to share findings from original research, big data, learning analytics, and more. Both novices and seasoned designers in education, business, and other areas can use this book's effective, linear process to develop data visualization literacy and promote exploratory, inquiry-based approaches to visualization problems.

Routledge
October 2018 : 284pp
Pb: 978-1-138-50391-5 : **£39.99**
Hb: 978-1-138-50387-8 : **£160**
eBook: 978-1-315-14609-6

* For full contents and more information, visit: www.routledge.com/9781138503915

Modern Data Visualization with R



Robert Kabacoff

Series: *Chapman & Hall/CRC The R Series*

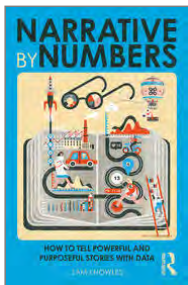
Describes ways that raw and summary data can be turned into visualizations that convey meaningful insights: basic graphs, bar charts, scatter plots, and line charts, and progresses to tree maps, alluvial plots, radar charts, mosaic plots, grouped dot plots, effects plots, multivariate presentations such as corrgrams, biplots, network diagrams.

Chapman & Hall
March 2024 : 271pp
Pb: 978-1-032-28760-7 : **£67.99**
Hb: 978-1-032-28949-6 : **£175**
eBook: 978-1-003-29927-1

* For full contents and more information, visit: www.routledge.com/9781032287607

Narrative by Numbers

How to Tell Powerful and Purposeful Stories with Data



Sam Knowles

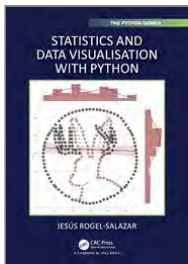
Series: *Using Data Better*

As jobs in the knowledge economy become increasingly similar, there are two core skills that everyone needs if they are going to thrive and succeed and to make a difference. These are the ability to interrogate and make sense of data, and the ability to use the insights extracted from the data to persuade others to take action. Analytics + storytelling = influence. Humans are hardwired to respond to stories and story structure. There are some simple and effective rules of data-driven storytelling that will help everyone tell more compelling, evidence-based stories, whoever they need to convince to create positive change. Narrative by Numbers shows you how.

Routledge
March 2018 : 176pp
Pb: 978-0-815-35314-0 : **£39.99**
Hb: 978-0-815-35315-7 : **£155**
eBook: 978-1-351-13722-5

* For full contents and more information, visit: www.routledge.com/9780815353140

Statistics and Data Visualisation with Python



Jesús Rogel-Salazar Imperial College London, UK

Series: *Chapman & Hall/CRC The Python Series*

Statistics and Data Visualisation with Python aims to build statistical knowledge from the ground up by enabling the reader to understand the ideas behind inferential statistics, and begin to formulate hypotheses that form the foundations for the applications and algorithms in statistical analysis, business analytics, machine learning and applied machine learning. This book is intended to serve as a bridge in statistics for graduates and business practitioners interested in using their skills in the area of statistical science, and data science and analytics, acting as a refresher for readers that have taken some courses in statistics, but do not necessarily use it in their daily work.

Chapman & Hall
January 2023 : 554pp
Pb: 978-0-367-74451-9 : **£49.99**
Hb: 978-0-367-74936-1 : **£135**
eBook: 978-1-003-16035-9

* For full contents and more information, visit: www.routledge.com/9780367744519

The Data Storytelling Workbook



Anna Feigenbaum , Aria Alamalhodaei

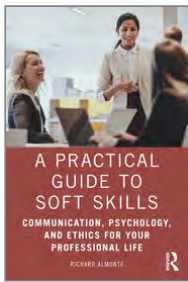
From tracking down information to symbolising human experiences, this book is your guide for telling more effective, empathetic and evidence-based data stories. Wide-ranging and in-depth, this interdisciplinary book is essential for students and researchers in journalism, communication, media, visual arts and cultural studies, as well as any who use data analysis and visualisation within their field.

Routledge
March 2020 : 256pp
Pb: 978-1-138-05211-6 : **£38.99**
Hb: 978-1-138-05210-9 : **£155**
eBook: 978-1-315-16801-2

* For full contents and more information, visit: www.routledge.com/9781138052116

A Practical Guide to Soft Skills

Communication, Psychology, and Ethics for Your Professional Life



Richard Almonte

This accessible text overviews the range of soft skills sought after by employers and provides a practical guide to developing and effectively demonstrating these skills. The book can be used as a supplement for communication, business, and career-oriented courses, and will be of interest to individual students and junior professionals as well as career counsellors, postsecondary instructors across the curriculum, and professionals in human resources and learning and development.

Routledge
December 2021 : 188pp
Pb: 978-1-032-07105-3 : **£47.99**
Hb: 978-1-032-08101-4 : **£160**
eBook: 978-1-003-21294-2

* For full contents and more information, visit: www.routledge.com/9781032071053

3RD EDITION

Advanced Public Speaking

A Leader's Guide



Michael J. Hostetler St. John's University, USA, **Mary L. Kahl**

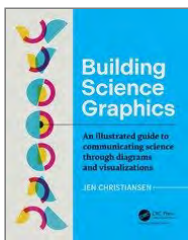
Providing users with the opportunity to increase their speaking abilities across a wide variety of complex and specific contexts, this student-engagement focused and flexible text serves as a core textbook for upper-level undergraduate public speaking courses.

Routledge
March 2024 : 212pp
Pb: 978-1-032-53186-1 : **£66.99**
Hb: 978-1-032-53187-8 : **£150**
eBook: 978-1-003-41078-2

* For full contents and more information, visit: www.routledge.com/9781032531861

Building Science Graphics

An Illustrated Guide to Communicating Science through Diagrams and Visualizations



Jen Christiansen

Series: *AK Peters Visualization Series*

Building Science Graphics is a practical guide for anyone interested in creating science-centric illustrated explanatory diagrams. Starting with a clear introduction to the concept of information graphics and their role in contemporary science communication, it then outlines a process for creating graphics using evidence-based design strategies. The heart of the book is composed of two step-by-step graphical worksheets, designed to help jump-start any new project.

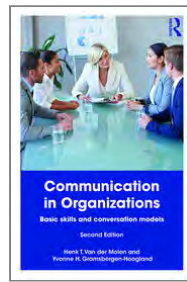
A K Peters/CRC Press
August 2022 : 357pp
Pb: 978-1-032-10674-8 : **£44.99**
Hb: 978-1-032-10940-4 : **£105**
eBook: 978-1-003-21781-7

* For full contents and more information, visit: www.routledge.com/9781032106748

2ND EDITION

Communication in Organizations

Basic Skills and Conversation Models



Henk T. Van der Molen, **Yvonne Gramsbergen-Hoogland**

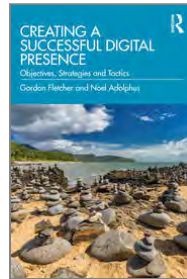
This new edition continues to give clear advice and guidance on communicating in a range of different contexts in the workplace. From handling complaints and breaking bad news to negotiating deals and giving presentations, the book explores the building blocks to effective communication skills, nurturing the leadership qualities required in any organization. Illustrated with concrete examples throughout, the new edition includes a new chapter on career coaching, as well as exercises and ideas for role-play to enable the ideas to come alive. This will be an invaluable book for students of management and business psychology, as well as those taking courses who are already in the workplace.

Routledge
October 2018 : 214pp
Pb: 978-1-138-55212-8 : **£35.99**
Hb: 978-1-138-55210-4 : **£155**
eBook: 978-1-315-14796-3

* For full contents and more information, visit: www.routledge.com/9781138552128

Creating a Successful Digital Presence

Objectives, Strategies and Tactics



Gordon Fletcher, **Noel Adolphus**

Increasingly graduates, and anyone entering employment, need an individual digital presence to showcase themselves to secure their first professional role. It takes an employability approach to encourage readers to recognise and deliver an effective digital presence. By using a strategic and systematic process, this book draws together academic thinking with practical outcomes. It is essential reading for advanced undergraduate and postgraduate students studying any discipline related to the digital world, particularly digital marketing and digital business, entrepreneurship and strategy, as well as those taking employability and personal professional development programmes.

Routledge
July 2021 : 212pp
Pb: 978-0-367-46037-2 : **£41.99**
Hb: 978-0-367-46034-1 : **£155**
eBook: 978-1-003-02658-7

* For full contents and more information, visit: www.routledge.com/9780367460372

English for Business Communication



Mable Chan

Series: *Routledge Applied English Language Introductions*

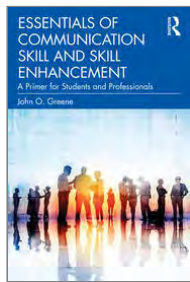
This textbook provides a comprehensive introduction for students and professionals who are studying English for business or workplace communication and covers both spoken and written English. Based on up-to-date research in business communication and incorporating an international range of real-world authentic texts, this book deals with the realities of communication in business today. This book goes beyond the traditional coverage of business English to provide a broad and practical textbook for those studying English in a workplace setting.

Routledge
January 2020 : 246pp
Pb: 978-1-138-48168-8 : **£39.99**
Hb: 978-1-138-48167-1 : **£155**
eBook: 978-1-351-06003-5

* For full contents and more information, visit: www.routledge.com/9781138481688

Essentials of Communication Skill and Skill Enhancement

A Primer for Students and Professionals



John O. Greene

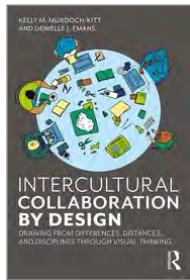
For those who wish to learn or teach the tools of skillful communication, this book provides concrete insight into what makes a person a successful communicator. Predicated on four simple notions—that communication can be done well or poorly, that communication skills matter, that people differ in those skills, and that those skills can be improved—the book helps readers identify and enhance their own communication strengths and address weaknesses, assess the communication skills of others, and coach others to improvement. This book is written for students and professionals in fields such as human resources, sales, training, counseling, customer relations, education, and healthcare.

Routledge
March 2021 : 174pp
Pb: 978-0-367-53428-8 : **£40.99**
Hb: 978-0-367-53838-5 : **£155**
eBook: 978-1-003-08345-0

* For full contents and more information, visit: www.routledge.com/9780367534288

Intercultural Collaboration by Design

Drawing from Differences, Distances, and Disciplines Through Visual Thinking



Kelly Murdoch-Kitt, Denielle Emans

Intercultural Collaboration by Design introduces a framework for collaborating across cultures and learning to use multicultural perspectives to address pressing global issues. With over 30 hands-on activities, this book will be of great interest to diverse teams from a variety of disciplines who want to enhance intercultural learning and co-working. Whether in the classroom or workplace, the activities are appropriate for a variety of collaboration contexts, without a need for background in art or design.

Routledge
January 2020 : 308pp
Pb: 978-0-367-21931-4 : **£35.99**
Hb: 978-0-367-21932-1 : **£140**
eBook: 978-0-429-26882-3

* For full contents and more information, visit: www.routledge.com/9780367219314

Interpersonal Skills for Group Collaboration

Creating High-Performance Teams in the Classroom and the Workplace



Tammy Rice-Bailey Milwaukee School of Engineering, USA, **Felicia Chong**

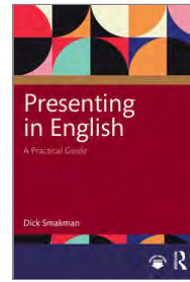
This lively and engaging text introduces readers to the core interpersonal and organizational skills needed to effectively collaborate on group projects in the classroom and the workplace. This guide can be used as a supplementary text for any courses involving group projects, and will also be of interest to professionals in communication, business, and many other fields.

Routledge
February 2023 : 142pp
Pb: 978-1-032-25906-2 : **£38.99**
Hb: 978-1-032-25907-9 : **£140**
eBook: 978-1-003-28557-1

* For full contents and more information, visit: www.routledge.com/9781032259062

Presenting in English

A Practical Guide



Dick Smakman

This practical guide introduces students to the language and other skills needed to deliver a presentation in English. Concise and accessible, the guide will be particularly helpful to learners of English. Accompanied by online support material with recordings, the book is an essential guide to delivering a successful presentation in English.

Routledge
June 2024 : 230pp
Pb: 978-1-032-62532-4 : **£40.99**
Hb: 978-1-032-62787-8 : **£155**
eBook: 978-1-032-62789-2

* For full contents and more information, visit: www.routledge.com/9781032625324

21ST EDITION

Principles of Public Speaking



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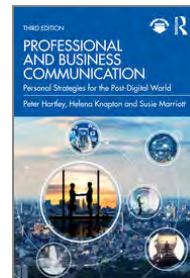
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