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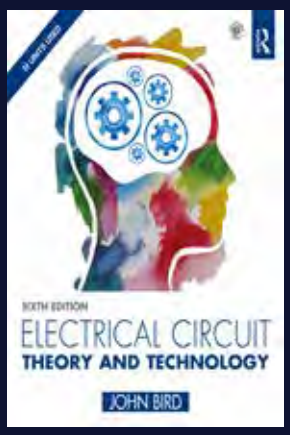

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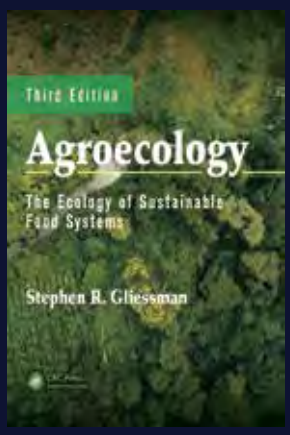

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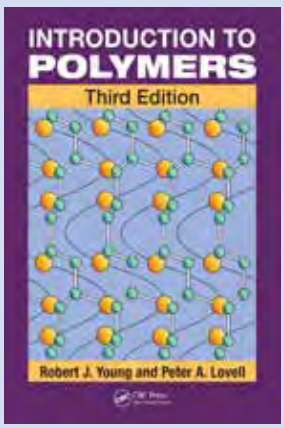

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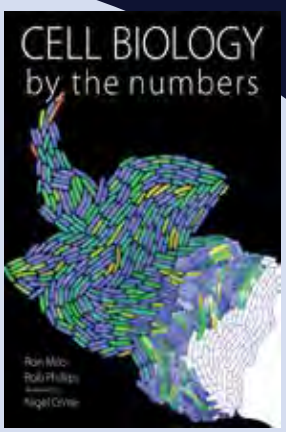

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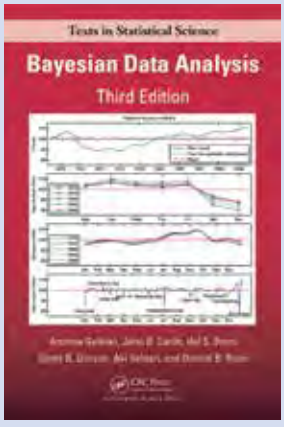

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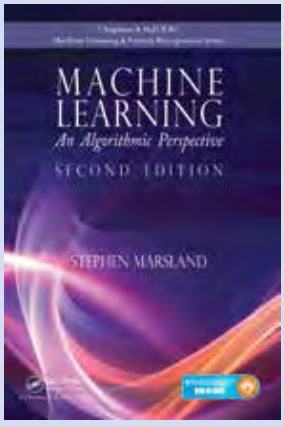

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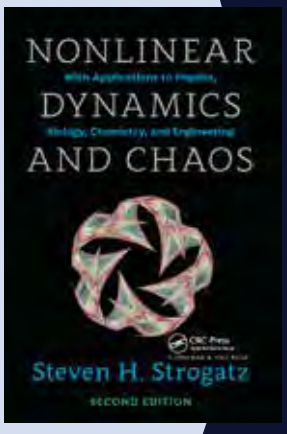

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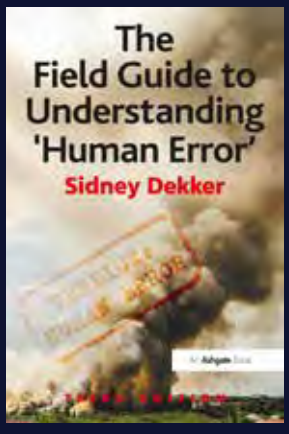

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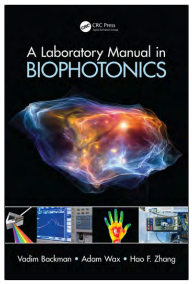
TEXTBOOK • READER

A Laboratory Manual in Biophotonics



Vadim Backman, Northwestern University, Evanston, Illinois, USA, **Adam Wax** and **Hao F. Zhang**

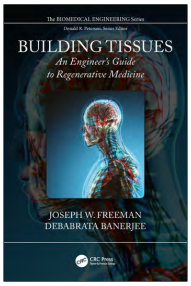
The increasing use of optical techniques for biomedical applications has led to significant interest in biophotonics as a growing field. From its basic concepts to more advanced topics and applications, this book provides a complete guide to biophotonics. The author offers both descriptive and quantitative perspectives as well as a comprehensive overview of major areas of research in the field. The text includes coverage of topics such as light tissue interaction, optical instrumentation, microscopic and macroscopic tissue imaging, tissue spectroscopy, therapeutic applications of optics, and molecular imaging.

CRC Press
Market: Biomedical Engineering
May 2018: 254 x 178: 319pp
Hb: 978-1-439-81051-4: **£100.00**
eBook: 978-1-498-74433-1
* For **full contents** and more information, visit: **www.routledge.com/9781439810514**

TEXTBOOK • READER

Building Tissues

An Engineer's Guide to Regenerative Medicine



Joseph W. Freeman and **Debabrata Banerjee**

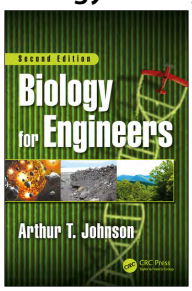
Series: Biomedical Engineering

In order to effectively replace and regenerate a tissue, engineers must be familiar with mechanics, diffusion, electrical conductivity, heat transfer, kinetics, and a host of other concepts that are frequently studied. Each of these concepts is exposed in this book through descriptive introductions followed by mathematical equations with example problems. After the concepts have been introduced, they will be applied to specific tissues and regenerative techniques. Students will be able to see how the concepts are applied differently from one tissue or structure to the next and how one concept may be more important to one tissue than it is to another.

CRC Press
Market: Biomedical Science
November 2018: 254 x 178: 233pp
Hb: 978-1-498-74280-1: **£110.00**
eBook: 978-0-429-42902-6
* For **full contents** and more information, visit: **www.routledge.com/9781498742801**

2nd Edition • TEXTBOOK • READER

Biology for Engineers, Second Edition



Arthur T. Johnson, North Carolina State University, USA.

This book gives a broad-range look at biological systems to establish fundamental understanding of living things from an engineering perspective. It does this by understanding how they relate to their environments and the methods used when dealing with living thngs.The intent is to give enough familiarity with living things that provides satisfactory solutions to technical problems that can be made using or applied to biological systems at any particular level of complexity.The ancillary benefit of *Biology for Engineers* is that biology can be seen to be quite interesting from an engineering viewpoint.

CRC Press
Market: Biomedical Science
October 2018: 254x178: 988pp
Hb: 978-1-138-06789-9: **£120.00**
eBook: 978-1-351-16564-8
Prev. Ed Hb: 978-1-420-07763-6
* For **full contents** and more information, visit: **www.routledge.com/9781138067899**

4th Edition • TEXTBOOK • READER

Design of Biomedical Devices and Systems, 4th edition

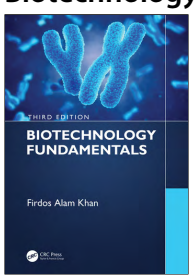
Paul H. King, Vanderbilt University, Nashville, Tennesee, USA, **Richard C. Fries**, ISORel, Inc., Fitchburg, Wisconsin, USA and **Arthur T. Johnson**, North Carolina State University, USA.

This will be a substantial revision of a highly regarded text, intended for senior design capstone courses within departments of biomedical engineering, bioengineering, biological engineering and medical engineering, worldwide. Each chapter will be thoroughly updated and revised to reflect the latest developments. New material will be added on entrepreneurship, bioengineering statistics, clinical trials and CRISPR. New examples, applications and problems will be added in each chapter.There will be strong efforts made to increase the number of clinical applications to enhance the overall relevance of the material that's presented. Significant new material added on FDA regulations.

CRC Press
Market: Biomedical Science
October 2018: 254 x 178: 542pp
Hb: 978-1-138-72306-1: **£120.00**
eBook: 978-0-429-43479-2
Prev. Ed Hb: 978-1-466-56913-3
* For **full contents** and more information, visit: **www.routledge.com/9781138723061**

TEXTBOOK • READER

Biotechnology Fundamentals Third Edition



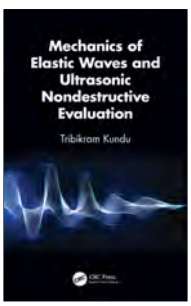
Firdos Alam Khan, Manipal University, Dubai, UAE

Biotechnology Fundamentals, Third Edition breaks down the basic fundamentals of this discipline, and highlights both conventional and modern approaches unique to the industry. The revised work presents new information on Forensic Science, Bioinformatics, Synthetic Biology, Biosimilars and Regenerative Medicine. In addition to recent advances and updates relevant to the previous edition, the revised work also covers ethics in biotechnology and discusses career possibilities in this growing field.

CRC Press
Market: Biomedical Sciences
March 2020: 254 x 178: 389pp
Hb: 978-1-138-61208-2: **£89.99**
eBook: 978-1-003-02475-0
* For **full contents** and more information, visit: **www.routledge.com/9781138612082**

TEXTBOOK • READER

Mechanics of Elastic Waves and Ultrasonic Nondestructive Evaluation



Tribikram Kundu, The University of Arizona, Tucson, USA

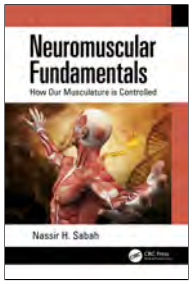
This book gives the reader the necessary mechanics background to understand and analyze elastic wave propagation in solids. This knowledge is necessary for modeling and interpreting experimental results generated by ultrasonic nondestructive evaluation (NDE) techniques. It will cover both linear and nonlinear ultrasonic NDE methods. This is important in determing internal damages in structural components, that need to be detected in a nondestructive fashion. Examples would be cracks inside various structural components related to aircraft, ships, automobiles and bridges. Knowledge contained in this book is quite useful for such damage detection applications.

CRC Press
Market: Engineering - Mechanical
January 2019: 235 x 156: 396pp
Hb: 978-1-138-03594-2: **£105.00**
eBook: 978-1-315-22619-4
* For **full contents** and more information, visit: **www.routledge.com/9781138035942**

TEXTBOOK • READER

Neuromuscular Fundamentals

How Our Musculature is Controlled



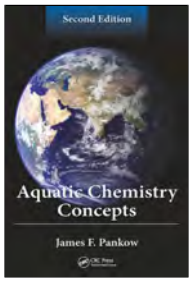
Nassir H. Sabah, American University of Beirut, Lebanon

The book is concerned with the operation of the neuromuscular system, which is the part of our nervous system that enables us to maintain an upright posture and allows voluntary or involuntary movement of our limbs and other body parts. The approach is essentially that of an engineering textbook, emphasizing the quantitative aspects and highlighting the fundamentals and basic concepts involved. The coverage progresses in a logical and systematic manner from the subcellular, starting with the electrophysiology of the cell membrane, then proceeding to synapses, neurons, and muscle, before considering neuronal motor ensembles and the neuromuscular system as a whole.

CRC Press
Market: Biomedical Engineering
November 2020: 235 x 156: 574pp
Hb: 978-0-367-45692-4: **£115.00**
eBook: 978-1-003-02479-8
* For **full contents** and more information, visit: **www.routledge.com/9780367456924**

2nd Edition • TEXTBOOK • READER

Aquatic Chemistry Concepts, Second Edition



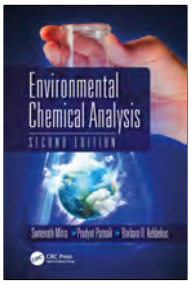
James F. Pankow, Oregon Graduate Institute, Beaverton, USA

Aquatic Chemistry Concepts, Second Edition. Fully revised and updated, this textbook fills the need for a comprehensive treatment of aquatic chemistry and covers the many complicated equations and principles of aquatic chemistry. It presents the established science of equilibrium water chemistry using the uniquely recognizable, step-by-step *Pankow* format which allows a broad and deep understanding aquatic chemistry. The text is appropriate for a wide audience that includes undergraduate and graduate students, industry professionals, consultants, and regulators.

CRC Press
Market: Water Chemistry
November 2019: 254 x 178: 584pp
Hb: 978-1-439-85440-2: **£74.99**
eBook: 978-0-429-19886-1
Prev. Ed Hb: 978-0-873-71150-0
* For **full contents** and more information, visit: **www.routledge.com/9781439854402**

2nd Edition • TEXTBOOK • READER

Environmental Chemical Analysis



S. Mitra, New Jersey Institute of Technology, Newark, USA, **Pradyot Patnaik**, New Jersey Institute of Technology, Newark, USA and **B.B. Kebbekus**, New Jersey Institute of Technology, Newark, USA

Environmental Chemical Analysis provides an explanation of analytical instrumentation methods for students without a background in analytical chemistry. This second edition features expanded material on sample preparation and quality assurance and control. It also includes new chapters on biological analysis and analysis of environmental particulates. It brings together sampling, sample preparation, and analytical techniques necessary for environmental applications, demonstrated through case studies of actual environmental measurement protocols.

CRC Press
August 2018: 229 x 152: 449pp
Hb: 978-1-138-60409-4: **£180.00**
Pb: 978-0-849-33838-0: **£69.99**
eBook: 978-0-429-45820-0
Prev. Ed Pb: 978-0-751-40456-2
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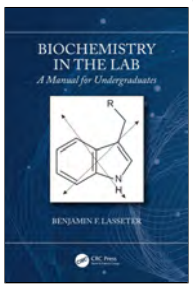
TEXTBOOK • READER

Biochemistry in the Lab

A Manual for Undergraduates



Benjamin F. Lasseter, Christopher Newport University, VA, USA

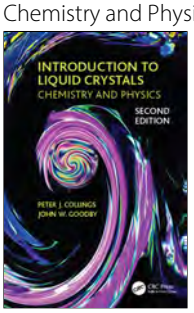
Biochemistry in the Lab: A Manual for Undergraduates presents a comprehensive approach to modern biochemistry laboratory teaching together with a complete experimental experience, from molecular biology, cloning, and protein expression, to purification and characterization.

CRC Press
Market: Chemistry
October 2019: 235 x 156: 202pp
Hb: 978-1-138-58992-6: **£120.00**
Pb: 978-1-138-58996-4: **£44.99**
eBook: 978-0-429-49126-9
* For **full contents** and more information, visit: **www.routledge.com/9781138589964**

2nd Edition • TEXTBOOK • READER

Introduction to Liquid Crystals

Chemistry and Physics, Second Edition



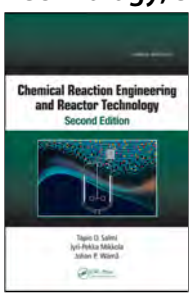
Peter J. Collings, Swarthmore College, Swarthmore, PA, USA and **John W. Goodby**, University of York, York, UK

Introduction to Liquid Crystals: Chemistry and Physics, Second Edition relies on only introductory level chemistry and physics as the foundation for understanding liquid crystal science. Liquid crystals combine the material properties of solids with the flow properties of fluids. As such they have provided the foundation for a revolution in low- power, flat-panel display technology LCDs. In this book, the essential elements of liquid crystal science are introduced and explained from the perspectives of the chemist, physicist and engineer.

CRC Press
Market: Chemistry
October 2019: 235 x 156: 531pp
Hb: 978-1-138-29885-9: **£190.00**
Pb: 978-1-138-29876-7: **£56.99**
eBook: 978-1-315-09834-0
* For **full contents** and more information, visit: **www.routledge.com/9781138298767**

2nd Edition • TEXTBOOK • READER

Chemical Reaction Engineering and Reactor Technology, Second Edition



Tapio O. Salmi, Abo Akademi, Abo-Turku, Finland, **Jyri-Pekka Mikkola**, Abo Akademi, Abo-Turku, Finland and **Johan P. Wärnå**, Abo Akademi, Abo-Turku, Finland

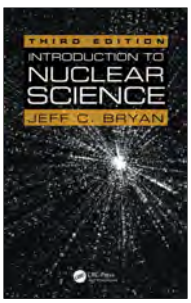
Series: Chemical Industries

This well received textbook develops the concept of chemical reaction engineering in a systematic manner, beginning with homogeneous reactors and gradually moving toward more complicated heterogeneous systems. Reactor technology is presented in an illustrative manner with many practical and varied applications included. Numerous realistic exercises help upper undergraduate and graduate students learn the concepts presented. A modern computing approach to chemical reaction engineering is taken throughout the material. The real-life examples make the book very attractive for a broad audience, including engineers working in chemical and process industry.

Chapman and Hall/CRC
Market: Engineering-Chemical
July 2019: 254 x 178: 656pp
Hb: 978-1-138-71250-8: **£115.00**
eBook: 978-1-315-20011-8
Prev. Ed Hb: 978-1-420-09268-4
* For **full contents** and more information, visit: **www.routledge.com/9781138712508**

3rd Edition • TEXTBOOK • READER

Introduction to Nuclear Science



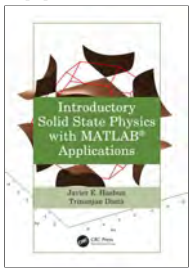
Jeff C. Bryan, University of Wisconsin, La Crosse, USA

Written to provide students who have limited backgrounds in the physical sciences and math with an accessible textbook on nuclear science, this edition continues to provide a clear and complete introduction to nuclear chemistry and physics, from basic concepts to nuclear power and medical applications. Incorporating suggestions from adopting professors, the discussion of neutron cross sections is expanded, coverage of the nuclear fuel cycle is now included, and international terms are incorporated. This updated, expanded edition provides a much-needed textbook and resource for undergraduate students in science and engineering as well as those studying nuclear medicine and radiation therapy.

CRC Press
Market: Nuclear Physics and Chemistry
February 2018: 235 x 156: 440pp
Hb: 978-1-138-06815-5: **£84.99**
eBook: 978-0-429-22536-9
Prev. Ed Hb: 978-1-439-89892-5
* For **full contents** and more information, visit: **www.routledge.com/9781138068155**

TEXTBOOK • READER

Introductory Solid State Physics with MATLAB Applications



Javier E. Hasbun and **Trinanjan Datta**

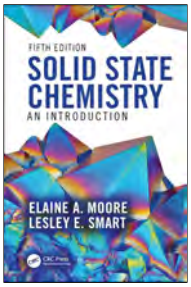
Solid state physics, the study and prediction of the fundamental physical properties of materials, forms the backbone of modern materials science and has many technological applications. The unique feature of this text is the MATLAB -based computational approach with several numerical techniques and 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
Market: Physics
October 2019: 254 x 178: 570pp
Hb: 978-1-466-51230-6: **£74.99**
eBook: 978-0-429-08660-1
* For **full contents** and more information, visit: **www.routledge.com/9781466512306**

5th Edition • TEXTBOOK • NEW EDITION

Solid State Chemistry

An Introduction



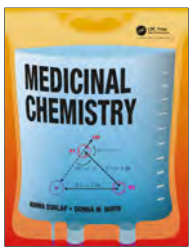
Elaine A. Moore, The Open University, Milton Keynes, UK and **Lesley E. Smart**, The Open University, Milton Keynes, UK

Solid State Chemistry: An Introduction presents a wide range of the synthetic and physical techniques used to prepare and characterize solids. Going beyond this, this largely nonmathematical introduction to solid state chemistry includes the bonding and electronic, magnetic, electrical and optical properties of solids. Solids of particular interest – porous solids, superconductors and nanostructures are included. Practical examples of applications and modern developments are given. It offers students the opportunity to apply their knowledge in real-life situations and serve them well throughout their degree course.

CRC Press
Market: Chemistry
August 2020: 235 x 156: 442pp
Hb: 978-0-367-13580-5: **£150.00**
Pb: 978-0-367-13572-0: **£59.99**
eBook: 978-0-429-02728-4
Prev. Ed Pb: 978-1-439-84790-9
* For **full contents** and more information, visit: **www.routledge.com/9780367135720**

TEXTBOOK

Medicinal Chemistry



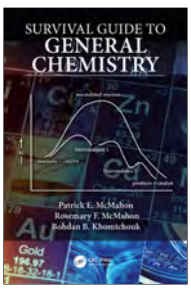
Norma K Dunlap, Middle Tennessee State University, USA and **Donna M Huryn**, University of Pennsylvania and University of Pittsburgh, USA

Medicinal Chemistry teaches the essential concepts of medicinal chemistry from the perspective of practicing chemists, starting with a synthetic organic chemistry and structural biology foundation and interweaving coverage of therapeutics, case studies, historical context, and modern techniques. Each chapter features a Journal Club, as well as review and application questions to enhance and test comprehension. This textbook is ideal for upper-level undergraduates and graduate students taking a one-semester survey course on medicinal chemistry and/or drug discovery, as well as scientists entering the pharmaceutical industry.

Garland Science
Market: Chemistry
April 2018: 280 x 210: 508pp
Pb: 978-0-815-34556-5: **£89.99**
eBook: 978-1-315-10047-0
* For **full contents** and more information, visit: **www.routledge.com/9780815345565**

TEXTBOOK • READER

Survival Guide to General Chemistry



Patrick E. McMahon, Benedictine University, Organic Chemistry and General Chemistry, Lisle, Illinois, USA, **Rosemary McMahon** and **Bohdan Khomtchouk**

This work evolved over thirty combined years of teaching general chemistry to a variety of student demographics.The focus is not to recap or review the theoretical concepts well described in the available texts.Instead, the topics and descriptions in this book make available specific, detailed step-by-step methods and procedures for solving the major types of problems in general chemistry.Explanations, instructional process sequences, solved examples and completely solved practice problems are greatly expanded, containing significantly more detail than can usually be devoted to in a comprehensive text. Many chapters also provide alternative viewpoints as an aid to understanding.

CRC Press
Market: Chemistry
February 2019: 254 x 178: 532pp
Hb: 978-1-138-33372-7: **£270.00**
Pb: 978-1-138-33362-8: **£99.99**
eBook: 978-0-429-44582-8
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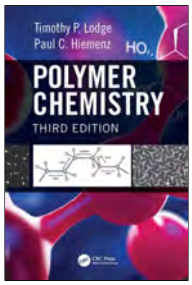
3rd Edition • TEXTBOOK • NEW EDITION

Polymer Chemistry



Timothy P. Lodge, University of Minnesota-Twin Cities, Minneapolis, USA and **Paul C. Hiemenz**, Emeritus -Cal State Polytechnic University, Pomona, CA

A well-rounded and articulate examination of polymer properties at the molecular level, this book focuses on fundamental principles based on underlying chemical structures, polymer synthesis, characterization, and properties. It emphasizes the logical progression of concepts and provide mathematical tools as needed, and fully derived problems for advanced calculations. This book expands and reorganizes material within chapters 2-5 to better develop polymer chemistry concepts and update the remaining chapters. New examples and problems will be added throughout.

CRC Press
Market: Polymer Chemistry
July 2020: 254 x 178: 676pp
Hb: 978-1-466-58164-7: **£74.99**
eBook: 978-0-429-19081-0
Prev. Ed Hb: 978-1-574-44779-8
* For **full contents** and more information, visit: **www.routledge.com/9781466581647**

4th Edition • TEXTBOOK • READER

Transport Phenomena Fundamentals

Joel L. Plawsky, Rensselaer Polytechnic Institute, Troy, New York, USA

Series: Chemical Industries

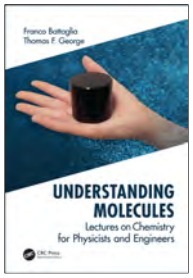
The Fourth edition of Transport Phenomena Fundamentals continues with its streamlined approach to the subject of transport phenomena, based on a unified treatment of heat, mass, and momentum transport using a balance equation approach. The new edition includes more worked examples within each chapter and adds confidence building problems at the end of each chapter. Some solutions will be included in an appendix for students to check their comprehension of key concepts. A companion website will include author videos and COMSOL®, Maple®, and MATLAB® exercises. This edition also incorporates a wider range of problems to expand the utility of the text beyond chemical engineering.

CRC Press
Market: Engineering-Chemical
March 2020: 254 x 178: 862pp
Hb: 978-1-138-08056-0: **£120.00**
eBook: 978-1-315-11338-8
Prev. Ed Hb: 978-1-466-55533-4
* For **full contents** and more information, visit: **www.routledge.com/9781138080560**

TEXTBOOK • READER

Understanding Molecules

Lectures on Chemistry for Physicists and Engineers



Franco Battaglia and **Thomas F. George**, Department of Psychology, Mills College, Oakland, CA

Chemistry is a subject that many students with differing goals have to tackle. This unique general chemistry textbook is tailored to more mathematically-oriented engineering or physics students. The authors emphasize the principles underlying chemistry rather than chemistry itself and the almost encyclopedic completeness appearing in a common textbook of general chemistry is sacrificed for an emphasis to these principles. Contained within 500 pages, it is suitable for a one-semester course for students who are strong in physics and mathematics. Over 200 problems are provided to ensure understanding, and answers are provided in the text so that the students can check their progress.

CRC Press
Market: Chemistry
October 2018: 254 x 178: 322pp
Hb: 978-1-138-32930-0: **£120.00**
eBook: 978-0-429-44826-3
* For **full contents** and more information, visit: **www.routledge.com/9781138329300**

TEXTBOOK • READER

A Practical Guide to Vehicle Refinishing

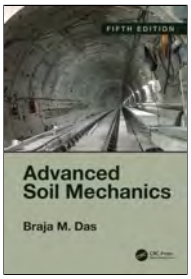
Julian Woodstock, Colchester Institute, UK

This is a heavily illustrated guide for the Level 2 and 3 vehicle refinishing qualifications and a troubleshooting reference for more advanced technicians. It covers the whole repair process - from identifying different substrates and prepping to applying top coats - along with tools, equipment and health and safety.

CRC Press
Market: Automotive Engineering
October 2019: 246x174: 244pp
Hb: 978-1-138-48666-9: **£84.99**
Pb: 978-1-138-48664-5: **£42.99**
eBook: 978-1-351-04054-9
* For **full contents** and more information, visit: **www.routledge.com/9781138486645**

5th Edition • TEXTBOOK • READER

Advanced Soil Mechanics, Fifth Edition



Braja M. Das, formerly at California State University, Sacramento, USA

The fifth edition of this established textbook offers a well-tailored resource for graduate students in geotechnical engineering. It bridges the gap between undergraduate basics and leading-edge work at graduate level. New material is included on consolidation, shear strength of soils, and both elastic and consolidation settlements of shallow foundations to accommodate modern developments.

This text can be followed by advanced courses dedicated to mechanical and chemical stabilization of soils, geo-environmental engineering, critical state soil mechanics, geosynthetics, rock mechanics, and earthquake engineering. It can also be used as a reference by practical consultants.

CRC Press
Market: Geotechnical Engineering
April 2019: 235 x 156: 734pp
Hb: 978-0-815-37913-3: **£120.00**
Pb: 978-0-367-73010-9: **£42.99**
eBook: 978-1-351-21518-3
Prev. Ed Hb: 978-0-415-50665-6
* For **full contents** and more information, visit: **www.routledge.com/9780815379133**

5th Edition • TEXTBOOK • READER

Advanced Automotive Fault Diagnosis

Automotive Technology: Vehicle Maintenance and Repair

Tom Denton, IMI eLearning Development Manager, UK

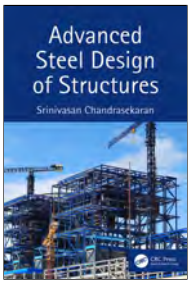
This provides all the skills to pass Level 3 and 4 Vehicle Diagnostic courses from IMI, City and Guilds and BTEC, as well as ASE, AUR and other higher level qualifications.

This fifth edition of *Advanced Automotive Fault Diagnosis* includes new content on diagnostic tools and equipment, with ten totally new case studies. It explains the fundamentals of vehicle systems and components and examines diagnostic principles as well as effective vehicle maintenance and repair. Diagnostics, or fault finding, is an essential part of an automotive technician's work, and as automotive systems become increasingly complex there is a greater need for good diagnostics skills.

Routledge
Market: Automotive Engineering
September 2020: 276x219: 418pp
Hb: 978-0-367-33054-5: **£94.99**
Pb: 978-0-367-33052-1: **£38.99**
eBook: 978-0-429-31778-1
Prev. Ed Pb: 978-0-415-72576-7
* For **full contents** and more information, visit: **www.routledge.com/9780367330521**

TEXTBOOK • READER

Advanced Steel Design of Structures



Srinivasan Chandrasekaran, Dept of Ocean Engineering, Indian Institute of Technology, Madras

Aim of the book is to explain advanced concepts of design of steel structures in a simple manner. Scope of the book includes the following:

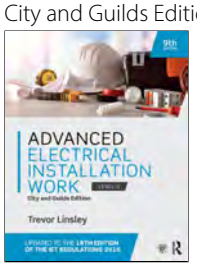
Analysis of members under unsymmetrical bending Structures with special geometry and their applications in offshore structures for ultra-deep water oil and gas exploration Analysis of members under fire and design principles Design of members under impact loads Design of aluminium sections Design of light-gauge sections Stability analysis

CRC Press
Market: Civil & Mechanical Engineering
October 2019: 235 x 156: 302pp
Hb: 978-0-367-23290-0: **£89.99**
eBook: 978-0-429-27915-7
* For **full contents** and more information, visit: **www.routledge.com/9780367232900**

9th Edition • TEXTBOOK • READER

Advanced Electrical Installation Work

City and Guilds Edition



Trevor Linsley, formerly a Senior Lecturer at Blackpool and the Fylde College and Head of the NVQ Assessment Centre, UK.

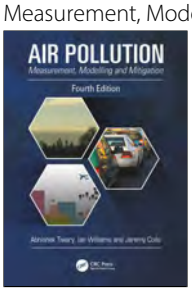
This new edition covers the City and Guilds 2365-03 course, updated in line with the 18th Edition of the Wiring Regulations. Written in an accessible style with a chapter dedicated to each unit of the syllabus, this book helps you to master each topic before moving on to the next. This new edition includes information on construction and demolition sites, fire proofing, energy efficiency and LED lights, as well as some updated diagrams. End of chapter revision questions help you to check your understanding and consolidate the key concepts learned in each chapter. Full colour diagrams and extensive online material explain difficult concepts.

Routledge
Market: Electrical Installation
September 2019: 276x219: 434pp
Hb: 978-0-367-35976-8: **£150.00**
Pb: 978-0-367-35975-1: **£42.99**
eBook: 978-0-429-34297-4
Prev. Ed Pb: 978-1-138-84877-1
* For **full contents** and more information, visit: **www.routledge.com/9780367359751**

4th Edition • TEXTBOOK • READER

Air Pollution

Measurement, Modelling and Mitigation, Fourth Edition



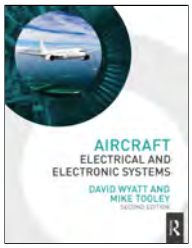
Abhishek Tiwary, Northumbria University, UK and **Ian Williams**, PhD, Department of Psychological Sciences, Purdue University

This established textbook offers comprehensive coverage of air pollution, a rapidly developing field. The fourth edition, broadly updated and developed throughout, brings a heavily reworked introduction plus new and overhauled chapters on source mitigation, noise and light pollution, and air quality experiments. It adds extra materials geared to the students—case studies, laboratory experiments that can be performed as class practical experiments or as project work, and self-study exercises, plus some more challenging questions at the end of each chapter.

CRC Press
Market: Engineering - Environmental
June 2018: 246x174: 722pp
Hb: 978-1-138-50366-3: **£115.00**
Pb: 978-1-498-71945-2: **£57.99**
eBook: 978-1-498-71946-9
* For **full contents** and more information, visit: **www.routledge.com/9781498719452**

2nd Edition • TEXTBOOK • READER

Aircraft Electrical and Electronic Systems



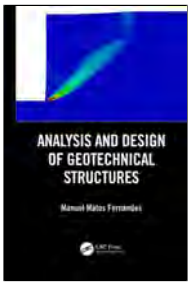
David Wyatt, head of Airworthiness at Gama Engineering and **Mike Tooley**, former Vice Principal at Brooklands College, UK

Introducing the principles of communications and navigation systems, this book is written for anyone pursuing a career in aircraft maintenance engineering or a related aerospace engineering discipline, and in particular will be suitable for those studying for licensed aircraft maintenance engineer status. It systematically addresses the relevant sections of modules 11 and 13 of part-66 of the EASA syllabus, and is ideal for anyone studying as part of an EASA and FAR-147 approved course in aerospace engineering.

Routledge
Market: Aircraft Engineering
May 2018: 246x189: 438pp
Hb: 978-1-138-58960-5: **£120.00**
Pb: 978-0-415-82776-8: **£41.99**
eBook: 978-0-429-50422-8
Prev. Ed Pb: 978-0-750-68695-2
* For **full contents** and more information, visit: **www.routledge.com/9780415827768**

TEXTBOOK • READER

Analysis and Design of Geotechnical Structures



Manuel Matos Fernandes, University of Porto, Portugal

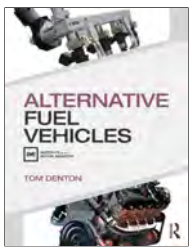
Analysis and Design of Geotechnical Structures bridges the gap between basic soil mechanics and geotechnical engineering practice to particularly suit Masters students. It presents the theory and methods underpinning geotechnical design and also serves as a manual for practitioners.

With solutions manual. Basic principles and analysis are given with design practice to Eurocode 7, with a series of topics including: overall stability of soil masses, earth pressure, spread foundations, consolidation theory and delayed settlements in clayey soils, earth-retaining walls, natural slopes, and compacted fill and earthworks. Along with geotechnical characterization, with a focus on field tests.

CRC Press
Market: Civil and Geotechnical Engineering
August 2020: 254 x 178: 754pp
Hb: 978-0-367-02662-2: **£130.00**
Pb: 978-0-367-02663-9: **£48.99**
eBook: 978-0-429-39845-2
* For **full contents** and more information, visit: **www.routledge.com/9780367026639**

TEXTBOOK • READER

Alternative Fuel Vehicles



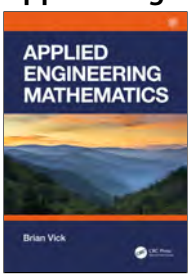
Tom Denton, IMI eLearning Development Manager, UK

Alternative Fuel Vehicles examines the ever growing demand for vehicles that operate using non-conventional fuels. This book provides an overview of alternative fuels, ideal for beginners, starting with the very basic principles of alternative fuel, before moving on to consider alternative fuel technologies, the influencing environmental factors and the future of alternative fuel. Using real-life case studies and examples, this book is an ideal companion to any unit of study on alternative fuel, but will also be of interest to working technicians and keen amateurs.

Routledge
Market: Automotive Engineering
May 2018: 246x174: 120pp
Hb: 978-1-138-50370-0: **£79.99**
Pb: 978-1-138-20131-6: **£42.99**
eBook: 978-1-315-51225-9
* For **full contents** and more information, visit: **www.routledge.com/9781138201316**

TEXTBOOK • READER

Applied Engineering Mathematics



Brian Vick, Virginia Tech, USA

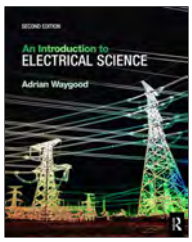
Undergraduate engineering students need good mathematics skills, and this textbook supports this with a strong emphasis on visualization and the methods and tools needed across the whole of engineering.

The visual approach is emphasised, and excessive proofs and derivations are avoided. The visual images explain and teach the mathematical methods. The book's website provides dynamic and interactive codes in *Mathematica* to accompany the examples for the reader to explore on their own.

CRC Press
Market: Mathematics for Engineering
May 2020: 254 x 178: 246pp
Hb: 978-0-367-43277-5: **£99.99**
Pb: 978-0-367-43276-8: **£48.99**
eBook: 978-1-003-00226-0
* For **full contents** and more information, visit: **www.routledge.com/9780367432768**

2nd Edition • TEXTBOOK • READER

An Introduction to Electrical Science



Adrian Waygood

This second edition of Adrian Waygood's textbook provides an indispensable introduction to the science behind electrical engineering. It is aimed for those starting careers in electronics, as well as any hobbyists, with an array of new material to reflect changes in the industry.

With a companion website at www.routledge.com/cw/waygood

Routledge
Market: Electrical Engineering
October 2018: 276x219: 372pp
Hb: 978-0-815-39182-1: **£130.00**
Pb: 978-0-815-39181-4: **£42.99**
eBook: 978-1-351-19043-5
Prev. Ed Pb: 978-0-415-81002-9
* For **full contents** and more information, visit: **www.routledge.com/9780815391814**

TEXTBOOK • READER

Automated Driving and Driver Assistance Systems

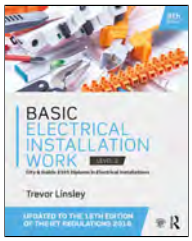
Tom Denton, IMI eLearning Development Manager, UK

Automated driving vehicles are undergoing serious testing around the world. This book explains the technologies straightforwardly, covering the subject from several angles but in particular showing the links to existing ADAS technologies already in use on all modern vehicles. While some manufacturers expect to have vehicles available from 2020, it will be much longer before they are commonplace. Yet it is crucial to be ready for the huge change automated driving will bring. This is the first book of its type available and complements Tom Denton's other books.

Routledge
Market: Automotive Engineering
October 2019: 246x189: 154pp
Hb: 978-0-367-26560-1: **£84.99**
Pb: 978-0-367-26559-5: **£42.99**
eBook: 978-0-429-29385-6
* For **full contents** and more information, visit: **www.routledge.com/9780367265595**

9th Edition • TEXTBOOK • READER

Basic Electrical Installation Work



Trevor Linsley, former Senior Lecturer at Blackpool and the Fylde College

Basic Electrical Installation Work suits students taking the City and Guilds 2365 Diploma, that is, the first year course of an electrical installation apprenticeship. The book provides answers to all of the 2365 syllabus learning outcomes, and one chapter is dedicated to each unit of the five units in the City and Guilds course.

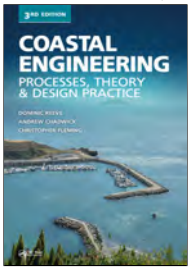
This edition is brought up to date and in line with the 18th Edition of the IET Regulations

Routledge
Market: Electrical Installation
September 2018: 276x219: 390pp
Hb: 978-1-138-60323-3: **£84.99**
Pb: 978-1-138-60321-9: **£32.99**
eBook: 978-0-429-46697-7
Prev. Ed Pb: 978-1-138-84884-9
* For **full contents** and more information, visit: **www.routledge.com/9781138603219**

3rd Edition • TEXTBOOK • READER

Coastal Engineering

Processes, Theory and Design Practice



Dominic Reeve, University of Swansea, UK, **Andrew Chadwick**, retired from University of Plymouth, UK and **Christopher Fleming**, Halcrow Group Ltd., Swindon, UK

Coastal Engineering isa must-have book for final year undergraduate and engineering MSc students specializing in coastal engineering and management. This third edition covers a number of developments, with updates to conceptual and detailed design; a detailed example is given for the calculation of extreme wave conditions for design; and a rethinking of coastal system behaviour in the light of NERC's iCOASST project – along with a new section on the components of surge; the method for tidal analysis and calculation of amplitudes and phases of harmonic constituents from water level time series; a worked example of harmonic analysis; and an revised section on the Tohoku tsunami.

CRC Press
Market: Environmental and Coastal Engineering
April 2018: 246x174: 512pp
Hb: 978-1-138-06042-5: **£140.00**
Pb: 978-1-138-06043-2: **£46.99**
eBook: 978-1-351-16552-5
Prev. Ed Pb: 978-0-415-58353-4
* For **full contents** and more information, visit: **www.routledge.com/9781138060432**

2nd Edition • TEXTBOOK • READER

Bird's Comprehensive Engineering Mathematics

John Bird, formerly Senior Lecturer, HMS Sultan, UK

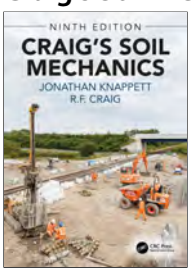
This comprehensive textbook covers the key mathematical principles for real-life engineering problems.

Along with its companion website it provides simple explanations, supported by 1600 worked problems and over 3200 further problems contained within 384 exercises throughout the text. With 34 Revision tests together with 9 Multiple-choice tests -- and detailed solutions to 3200 further problems.

Routledge
Market: Engineering
June 2018: 276x219: 1226pp
Hb: 978-0-815-37815-0: **£130.00**
Pb: 978-0-815-37814-3: **£46.99**
eBook: 978-1-351-23287-6
Prev. Ed Pb: 978-0-415-66284-0
* For **full contents** and more information, visit: **www.routledge.com/9780815378143**

9th Edition • TEXTBOOK

Craig's Soil Mechanics



Jonathan Knappett, University of Dundee, UK and **R.F. Craig**, University of Dundee, UK

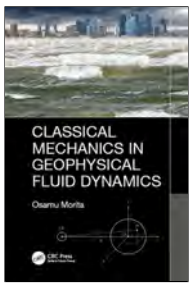
Craig's Soil Mechanics continues to evolve and remain the definitive text for civil engineering students worldwide. It covers fundamental soil mechanics and its application in applied geotechnical engineering from A to Z and at the right depth for an undergraduate civil engineer, with sufficient extension material for supporting MSc level courses, and with practical examples and digital tools to make it a useful reference work for practising engineers.

This new edition now includes restructured chapters and new material, as well as additional worked examples and end-of-chapter problems .

CRC Press
Market: Civil Engineering
October 2019: 246x189: 640pp
Hb: 978-1-138-07005-9: **£110.00**
Pb: 978-1-138-07006-6: **£34.99**
eBook: 978-1-351-05274-0
Prev. Ed Pb: 978-0-415-56126-6
* For **full contents** and more information, visit: **www.routledge.com/9781138070066**

TEXTBOOK • READER

Classical Mechanics in Geophysical Fluid Dynamics



Osamu Morita

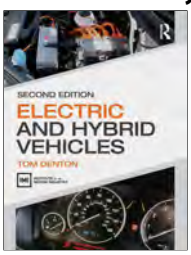
This textbook for senior undergraduate and graduate students outlines and provides links between classical mechanics and geophysical fluid dynamics. It is particularly suitable for the mechanics and fluids dynamics courses of geophysics, meteorology, or oceanography students as well as serving as a general textbook for a course on geophysical fluid dynamics.

It describes the motions of rigid bodies and shows how classical mechanics has important applications of to geophysics, as in the precession of the earth, oceanic tide, and the retreat of the moon from the earth owing to the tidal friction.

CRC Press
Market: Geophysics
August 2019: 235 x 156: 320pp
Hb: 978-0-367-26649-3: **£79.99**
eBook: 978-0-429-29438-9
* For **full contents** and more information, visit: **www.routledge.com/9780367266493**

2nd Edition • TEXTBOOK • READER

Electric and Hybrid Vehicles



Tom Denton, IMI eLearning Development Manager, UK

This straightforward and highly illustrated full colour textbook is endorsed by by the Institute of the Motor Industry, and introduces the subject for further education and undergraduate students as well as technicians.

This new edition includes a new section on diagnostics and completely updated case studies. Optional IMI online eLearning materials support readers. It is particularly suitable for students studying towards IMI Level 2 Award in Hybrid Electric Vehicle Operation and Maintenance, IMI Level 3 Award in Hybrid Electric Vehicle Repair and Replacement, IMI Accreditation, C&G and other EV/Hybrid courses.

Routledge
Market: Automotive Engineering
June 2020: 246x189: 222pp
Hb: 978-0-367-27324-8: **£89.99**
Pb: 978-0-367-27323-1: **£34.99**
eBook: 978-0-429-29610-9
Prev. Ed Pb: 978-1-138-84237-3
* For **full contents** and more information, visit: **www.routledge.com/9780367273231**

9th Edition • TEXTBOOK • READER

Electrical Installation Work

Brian Scaddan

Now updated in line with the 18th Edition of the Wiring Regulations, this highly successful book provides a topic by topic progression through the areas of electrical installations, including how and why electrical installations are designed, installed and tested. Brian Scaddan's subject-led approach makes this a valuable resource for professionals and students on both City and Guilds and EAL courses.

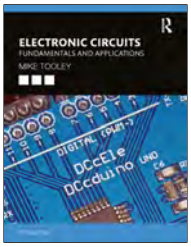
Additional content in this edition includes detail on LED lighting and medical locations. A new appendix contains a glossary of electrical installation work terms, ensuring that readers of all levels of experience can easily grasp every topic.

Routledge
Market: Electrical Installation
November 2018: 276x219: 320pp
Hb: 978-0-367-02336-2: **£160.00**
Pb: 978-0-367-02334-8: **£42.99**
eBook: 978-0-429-40012-4
Prev. Ed Pb: 978-1-138-84927-3
* For **full contents** and more information, visit: **www.routledge.com/9780367023348**

5th Edition • TEXTBOOK • READER

Electronic Circuits

Fundamentals and Applications



Mike Tooley

This fifth edition provides all the information required to get to grips with the fundamentals of electronics, detailing the underpinning knowledge necessary to appreciate the operation of a wide range of electronic circuits. An additional chapter shows how a wide range of useful electronic applications can be developed in conjunction with the increasingly popular Arduino microcontroller, and a new section details batteries for use in electronic equipment and some additional/updated student assignments. The book's content is matched to the latest pre-degree level courses (from Level 2 up to, and including, Foundation Degree and HND).

Routledge
Market: Electrical Engineering
November 2019: 246x189: 522pp
Hb: 978-0-367-42199-1: **£120.00**
Pb: 978-0-367-42198-4: **£42.99**
eBook: 978-0-367-82265-1
Prev. Ed Pb: 978-1-138-82892-6
* For **full contents** and more information, visit: **www.routledge.com/9780367421984**

2nd Edition • TEXTBOOK • READER

Electrical Installation Work: Level 2

EAL Edition

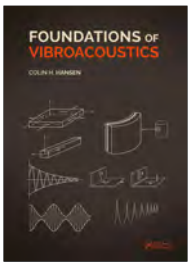
Trevor Linsley, formerly a Senior Lecturer at Blackpool and the Fylde College and Head of the NVQ Assessment Centre, UK.

Updated in line with the 18th Edition of the Wiring Regulations and written specifically for the EAL Diploma in Electrical Installation, this book has a chapter dedicated to each unit of the EAL syllabus, allowing you to master each topic before moving on to the next. End of chapter revision questions help you to check your understanding and consolidate the key concepts learned in each chapter. A must have for all learners working towards EAL electrical installations qualifications.

Routledge
Market: Electrical Installation
May 2019: 276x219: 378pp
Hb: 978-0-367-19562-5: **£115.00**
Pb: 978-0-367-19561-8: **£24.99**
eBook: 978-0-429-20317-6
Prev. Ed Pb: 978-1-138-91714-9
* For **full contents** and more information, visit: **www.routledge.com/9780367195618**

TEXTBOOK • READER

Foundations of Vibroacoustics



Colin Hansen, University of Adelaide, Australia

This text addresses principles and problems across vibroacoustics -- the prediction of structural vibration levels resulting from known force or pressure excitations and the prediction of sound radiation levels from structures vibrating with a known velocity amplitude.

CRC Press
Market: Acustics and Mechanical Engineering
March 2018: 254 x 178: 376pp
Hb: 978-1-138-09380-5: **£125.00**
Pb: 978-1-138-09381-2: **£56.99**
eBook: 978-1-315-10515-4
* For **full contents** and more information, visit: **www.routledge.com/9781138093812**

2nd Edition • TEXTBOOK • READER

Electrical Installation Work: Level 3

EAL Edition

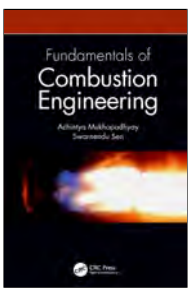
Trevor Linsley, formerly a Senior Lecturer at Blackpool and the Fylde College and Head of the NVQ Assessment Centre, UK.

Updated in line with the 18th Edition of the Wiring Regulations and written specifically for the EAL Diploma in Electrical Installation, this book has a chapter dedicated to each unit of the EAL syllabus, allowing you to master each topic before moving on to the next. This new edition also includes a section on LED lighting. End of chapter revision questions help you to check your understanding and consolidate the key concepts learned in each chapter. A must have for all learners working towards EAL electrical installations qualifications.

Routledge
Market: Electrical Installations
July 2019: 276x219: 530pp
Hb: 978-0-367-19564-9: **£115.00**
Pb: 978-0-367-19563-2: **£24.99**
eBook: 978-0-429-20318-3
Prev. Ed Pb: 978-1-138-91717-0
* For **full contents** and more information, visit: **www.routledge.com/9780367195632**

TEXTBOOK • READER

Fundamentals of Combustion Engineering



Achintya Mukhopadhyay, Indian Institute of Technology, Madras, Chennai, India and **Swarnendu Sen**, Jadavpur University, Kolkata, India

This book is an introductory text on fundamental aspects of combustion meant for use by senior undergraduate and graduate students, covering including thermodynamics, heat and mass transfer and chemical kinetics. The book covers combustion of gaseous, liquid and solid fuels and deals with emission of pollutants and greenhouse gases.

CRC Press
Market: Engineering - Mechanical
March 2019: 235 x 156: 335pp
Hb: 978-1-482-23330-8: **£115.00**
Pb: 978-0-367-73154-0: **£42.99**
eBook: 978-0-429-15821-6
* For **full contents** and more information, visit: **www.routledge.com/9781482233308**

TEXTBOOK • READER

Fundamentals of Convective Heat Transfer

Gautam Biswas, Department of Mechanical Engineering, Indian Institute of Technology Kanpur, India, **Amaresh Dalal** and **Vijay K. Dhir**, Mechanical and Aerospace Engineering, University of California, Los Angeles, US

Thermal convection is often encountered by the scientists and engineers while designing or analyzing flows involving exchange of energy. The book is a unified document that captures the physical insight into convective heat transfer, thorough analytical and numerical treatments. It also focusses on the latest developments in theory of convective energy and mass transport. Aimed at graduates, senior undergraduates and the engineers involved in research and development activities, it provides new material on Boiling, including nuances of physical processes. In all the derivations, step-by-step and systematic approaches have been followed.

CRC Press
Market: Mechanical Engineering
July 2019: 254 x 178: 330pp
Hb: 978-1-138-10329-0: **£110.00**
eBook: 978-0-429-19872-4
* For **full contents** and more information, visit: **www.routledge.com/9781138103290**

5th Edition • TEXTBOOK • READER

Mathematics Pocket Book for Engineers and Scientists

John Bird, formerly Senior Lecturer, HMS Sultan, UK

Series: Routledge Pocket Books

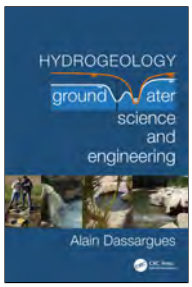
John Bird's compendium of essential formulae, definitions, tables and general information serves engineering students, technicians, scientists and professionals in engineering practice -- from algebra, geometry and trigonometry to logic circuits, differential equations and probability. It is supported by clear and succinct explanations, and illustrated with over 300 line drawings and 500 worked examples. It works as a reference for engineering students, technicians, scientists and professionals and as a revision guide for BTEC Nationals, Higher Nationals and NVQs.

Routledge
Market: Engineering Mathematics
October 2019: 216x138: 570pp
Hb: 978-0-367-26653-0: **£120.00**
Pb: 978-0-367-26652-3: **£42.99**
eBook: 978-0-429-29440-2
Prev. Ed Pb: 978-0-750-68153-7
* For **full contents** and more information, visit: **www.routledge.com/9780367266523**

TEXTBOOK • READER

Hydrogeology

Groundwater Science and Engineering



Alain Dassargues, University of Liège, Belgium

This text combines the science and engineering of hydrogeology. It provides a physical description and characterisation of hydrogeological processes and sets out the corresponding mathematical equations for groundwater flow and solute/heat transport calculations for graduate students and professionals.

CRC Press
Market: Water Science & Engineering
August 2018: 246x174: 492pp
Hb: 978-1-498-74400-3: **£79.99**
Pb: 978-0-367-65714-7: **£42.99**
eBook: 978-0-429-47066-0
* For **full contents** and more information, visit: **www.routledge.com/9781498744003**

4th Edition • TEXTBOOK

Mechanical Engineering Principles

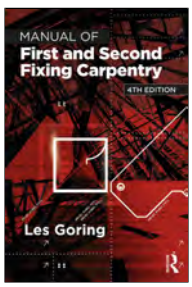
John Bird, formerly Senior Lecturer, HMS Sultan, UK and **Carl Ross**, Professor of Structural Dynamics, University of Portsmouth, UK

A student-friendly introduction to core mechanical engineering topics, focusing on examples and applications. The book contains 400 fully worked problems, 700 further problems with answers, and 300 multiple-choice questions. Two new chapters are included, covering the basic principles of matrix algebra and the matrix displacement method. The latter will also include guidance on software that can be used via SmartPhones, iPads or laptops. The new edition is up to date with the latest BTEC National specifications and can also be used on undergraduate courses in mechanical, civil, structural, aeronautical and marine engineering, and naval architecture.

Routledge
Market: Mechanical Engineering
September 2019: 276x219: 388pp
Hb: 978-0-367-25326-4: **£150.00**
Pb: 978-0-367-25324-0: **£36.99**
eBook: 978-0-429-28720-6
Prev. Ed Pb: 978-1-138-78157-3
* For **full contents** and more information, visit: **www.routledge.com/9780367253240**

4th Edition • TEXTBOOK • READER

Manual of First and Second Fixing Carpentry



Les Goring, former senior lecturer, Hastings College of Arts & Technology, UK

The book covers the essentials of 1st and 2nd-fixing carpentry, now with formwork for concrete in-situ casting, and fixing shelf arrangements to correct spans. With nearly 500 colour drawings and a detailed step-by-step approach, this is a for apprentices, students on NVQs and Construction Awards within the Wood Occupations from C&G Construction Skills, and a reference for practitioners.

Routledge
Market: Carpentry
April 2018: 276x219: 302pp
Hb: 978-1-138-29600-8: **£84.99**
Pb: 978-1-138-29599-5: **£42.99**
eBook: 978-1-315-09980-4
Prev. Ed Pb: 978-1-856-17768-9
* For **full contents** and more information, visit: **www.routledge.com/9781138295995**

3rd Edition • TEXTBOOK • READER

Planning and Design of Engineering Systems

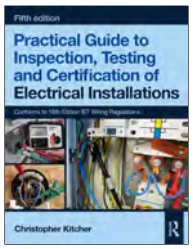
Graeme Dandy, **David Walker**, University of Adelaide, Australia, **Trevor Daniell**, **Robert Warner**, **Graeme Dandy**, **Trevor Daniell**, **Bernadette Foley**, University of Adelaide, Australia and **Robert Warner**

This newly updated book offers a comprehensive introduction to the scope and nature of engineering work, taking a rigorous but common sense approach to the solution of engineering problems

CRC Press
Market: Civil Engineering
December 2017: 235 x 156: 460pp
Hb: 978-1-138-03189-0: **£110.00**
Pb: 978-1-138-03190-6: **£42.99**
eBook: 978-1-351-22812-1
Prev. Ed Pb: 978-0-415-40552-2
* For **full contents** and more information, visit: **www.routledge.com/9781138031906**

5th Edition • TEXTBOOK

Practical Guide to Inspection, Testing and Certification of Electrical Installations



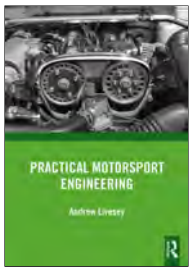
Christopher Kitcher, Central Sussex College, UK

Covers all your testing and inspection needs to help you pass your exams on City & Guilds 2391 and, EAL 600/4338/6 and 600/4340/4 and Part P courses -- up to date with the 18th Edition IET Wiring Regulations. www.routledge.com/cw/kitcher provides a large bank of helpful video demonstrations and multiple choice questions.

Routledge
Market: Electrical Installations
December 2018: 246x189: 306pp
Hb: 978-1-138-61333-1: **£62.99**
Pb: 978-1-138-61332-4: **£29.99**
eBook: 978-0-429-46229-0
Prev. Ed Pb: 978-1-138-84609-8
* For **full contents** and more information, visit: **www.routledge.com/9781138613324**

TEXTBOOK • READER

Practical Motorsport Engineering



Andrew Livesey

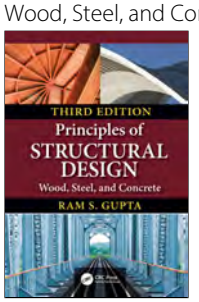
This book covers motorsport engineering from a practical point of view. Written by a practising professional in an accessible style, it offers a wide-ranging insight into the nuts and bolts technology of practical car racing for students at all levels, especially levels 2 and 3 IMI, EAL and BTEC courses, and engineers.

Routledge
Market: Automotive Engineering
December 2018: 246x174: 314pp
Hb: 978-0-815-37569-2: **£125.00**
Pb: 978-0-815-37568-5: **£42.99**
eBook: 978-1-351-23918-9
* For **full contents** and more information, visit: **www.routledge.com/9780815375685**

3rd Edition • TEXTBOOK • READER

Principles of Structural Design

Wood, Steel, and Concrete, Third Edition



Ram S. Gupta, Roger Williams University, Bristol, Rhode Island, USA

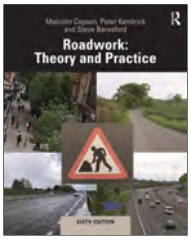
Timber, steel, and concrete are common engineering materials used in structural design. Material choice depends upon the type of structure, availability of material, and the preference of the designer. The design practices the code requirements of each material are very different. In this updated edition, the elemental designs of individual components of each material are presented, together with theory of structures essential for the design. Numerous examples of complete structural designs have been included. A comprehensive database comprising materials properties, section properties, specifications, and design aids, has been included to make this essential reading.

CRC Press
Market: Civil Engineering
June 2019: 254 x 178: 617pp
Hb: 978-1-138-49353-7: **£120.00**
eBook: 978-1-351-02770-0
Prev. Ed Hb: 978-1-466-55231-9
* For **full contents** and more information, visit: **www.routledge.com/9781138493537**

6th Edition • TEXTBOOK • READER

Roadwork

Theory and Practice



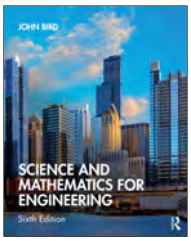
Malcolm Copson, Consulting Engineer, UK, **Peter Kendrick**, Consulting Engineer, UK and **Steve Beresford**, Consulting Engineer, UK

Roadwork Theory and Practice, now in its sixth edition, gives the essential information needed by every road worker, highway technician, incorporated, graduate or chartered engineer, not only by explaining the theory of road construction and its associated activities, but by illustrating its application with practical working methods that are in use in everyday engineering practice. As such, it successfully bridges the gap so often found between civil engineering theory and the day-to-day work of a highways engineer.

Routledge
Market: Civil Engineering / Road Construction
October 2019: 276x219: 364pp
Hb: 978-0-367-34235-7: **£84.99**
Pb: 978-0-815-38318-5: **£42.99**
eBook: 978-1-351-20511-5
Prev. Ed Pb: 978-0-750-66470-7
* For **full contents** and more information, visit: **www.routledge.com/9780815383185**

6th Edition • TEXTBOOK • READER

Science and Mathematics for Engineering



John Bird, formerly Senior Lecturer, HMS Sultan, UK

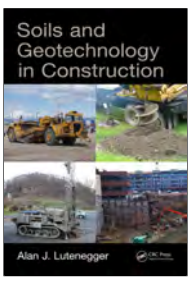
Science and Mathematics for Engineering is an introductory textbook that assumes no prior background in engineering. This 6th edition covers the fundamental scientific knowledge that all trainee engineers must acquire in order to pass their examinations and has been brought fully in line with the compulsory science and mathematics units in the new engineering course specifications. A new chapter covers ways of generating electricity – the present and the future, an important topic in the subject going forward.

This book includes over 580 worked examples, 1300 further problems and 425 multiple choice questions and is supported by a companion website.

Routledge
Market: Engineering Education
October 2019: 276x219: 576pp
Hb: 978-0-367-20475-4: **£84.99**
Pb: 978-0-367-20474-7: **£42.99**
eBook: 978-0-429-26170-1
Prev. Ed Pb: 978-1-138-82688-5
* For **full contents** and more information, visit: **www.routledge.com/9780367204747**

TEXTBOOK • READER

Soils and Geotechnology in Construction



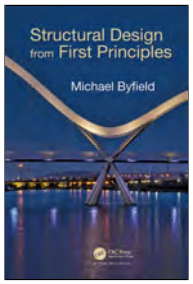
Alan J. Lutenegger, University of Massachusetts, Amberst, USA

This book covers the field of applied geotechnology related to all aspects of construction in ground, including compacted fill, excavations, ground improvement, foundations, earth retaining systems and geotechnical site characterization. It suits the first year of a graduate course on ground improvement and geoconstruction and will suit practicing engineers, both consultants and contractors. It covers the identification of problematic soils and appropriate mitigation measures, and the inspection of ground construction work. It combines the technical and the practical in applied geotechnology.

CRC Press
Market: Engineering - Civil
April 2019: 235 x 156: 505pp
Hb: 978-1-138-55110-7: **£160.00**
Pb: 978-1-498-74101-9: **£89.99**
eBook: 978-1-498-74102-6
* For **full contents** and more information, visit: **www.routledge.com/9781498741019**

TEXTBOOK • READER

Structural Design from First Principles



Michael Byfield

This undergraduate civil engineering textbook explains structural design from its mechanical principles rather than design codes. It presents good approximate solutions to complex design problems, such as "Wembley-Arch" type structures, the design of thin- walled structures, and long-span box girder bridges. These relatively simple techniques enable quick, early stage, "ball-park" design solutions, and are also useful for checking finite element analysis solutions to complex problems. It is consistent with the Eurocodes, but with the underlying theory fully explained. Explanation is closely linked to a structured series of worked examples at the end of each section

CRC Press
Market: Structural Engineering
February 2018: 254 x 178: 315pp
Hb: 978-1-138-50349-6: **£110.00**
Pb: 978-1-498-74121-7: **£42.99**
eBook: 978-1-498-74123-1
* For **full contents** and more information, visit: **www.routledge.com/9781498741217**

TEXTBOOK • READER

Techniques for Ship Handling and Bridge Team Management

Hiroaki Kobayashi, Tokyo University of Marine Science and Technology, Japan

Taking a rigorous and scientific look at good practice and attitudes, good seamanship can be viewed as a series of concrete technical functions, which can be in terms of competencies.

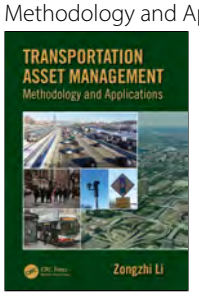
By giving proper attention to human factors the conditions for maintaining system safety can be defined, and the interaction of human competencies and environmental conditions and their effects on system safety can be recognised. System safety in turn depends on good bridge team management, with particular emphasis on communication, cooperation and leadership.

Routledge
Market: Maritime management and practice
November 2019: 235 x 156: 268pp
Hb: 978-0-367-31325-8: **£74.99**
eBook: 978-0-429-31627-2
* For **full contents** and more information, visit: **www.routledge.com/9780367313258**

TEXTBOOK • READER

Transportation Asset Management

Methodology and Applications



Zongzhi Li, Illinois Institute of Technology, Chicago, USA

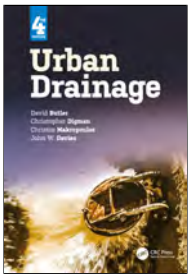
Transportation asset management delivers efficient and cost-effective investment decisions to support transportation infrastructure and system usage performance measured in economic, social, health, and environmental terms. It can be applied at national, state, and local levels. This can be applied to multimodal transportation, taking account of system component interdependency, integration, and risk and uncertainty. It applies as easily to static traffic and time-dependent or dynamic traffic.

It is written for transportation planners and engineers, as well as graduate students.

CRC Press
Market: Transport Engineering and Management
September 2018: 254 x 178: 760pp
Hb: 978-1-482-21052-1: **£120.00**
Pb: 978-0-367-65708-6: **£42.99**
eBook: 978-1-482-21053-8
* For **full contents** and more information, visit: **www.routledge.com/9781482210521**

4th Edition • TEXTBOOK • READER

Urban Drainage



David Butler, University of Exeter, UK, **Christopher James Digman**, **Christos Makropoulos**, National Technical University of Athens, Zografou, Greece and **John W. Davies**

This new edition covers the drainage of rainwater and wastewater. It deals comprehensively with the analysis and design of new systems and of existing infrastructure. Combining principles, practice and research, it provides significant new material on modelling, risk, smart urban drainage, and the global and local context.This is an essential text for undergraduate and Masters students in water engineering, environmental and public health engineering, engineering hydrology, and related disciplines. It is written in line with BS EN, WaPUG, serving as a reference for drainage design and drainage operation engineers and consulting engineers. It is illustrated with extensive examples.

CRC Press
Market: Water Science & Engineering
April 2018: 254 x 178: 592pp
Hb: 978-1-498-75293-0: **£105.00**
Pb: 978-1-498-75058-5: **£46.99**
eBook: 978-1-351-17430-5
Prev. Ed Pb: 978-0-415-45526-8
* For **full contents** and more information, visit: **www.routledge.com/9781498750585**

TEXTBOOK • READER

3ds Max Basics for Modeling Video Game Assets: Volume 1

Model a Complete Game Environment and Export to Unity or Other Game Engines

William Culbertson

A book for learning 3d modeling fundamentals, step-by-step lessons develops the readers modeling skills through a series of modeling exercises creating modules for a medieval castle environment, calling on the reader to perform repetitive tasks. The content is presented as if the reader is in a working video game studio, being responsible for researching asset design, providing the team with placeholder assets, and final model assets that are unwrapped and custom textured. Upon completion of the modeling projects, the modeled environment is exported to the Unity game engine for use in a real game environment.

CRC Press
Market: Games & Animation
April 2019: 254 x 178: 440pp
Hb: 978-1-138-34512-6: **£115.00**
Pb: 978-1-138-34506-5: **£52.99**
eBook: 978-0-429-43809-7
* For **full contents** and more information, visit: **www.routledge.com/9781138345065**

2nd Edition • TEXTBOOK • READER

A Practical Guide to Database Design

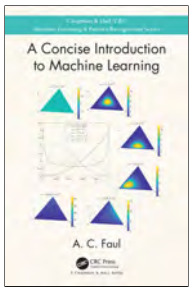
Rex Hogan

Fully updated and expanded from the previous edition, A Practical Guide to Database Design, Second Edition, is intended for those involved in the design or development of a database system or application. It begins by focusing on how to create a logical data model where data is stored "where it belongs." Next, data usage is reviewed to transform the logical model into a physical data model that will satisfy user performance requirements. Finally, it describes how to use various software tools to create user interfaces to review and update data in a database.

Chapman and Hall/CRC
Market: Information Technology
March 2018: 254 x 178: 430pp
Hb: 978-1-138-57806-7: **£84.99**
Pb: 978-0-367-57193-1: **£42.99**
eBook: 978-1-351-26548-5
* For **full contents** and more information, visit: **www.routledge.com/9781138578067**

TEXTBOOK • READER

A Concise Introduction to Machine Learning



A.C. Faul, University of Cambridge, UK

Series: Chapman & Hall/CRC Machine Learning & Pattern Recognition

The emphasis of the book is on the question of Why – only if why an algorithm is successful is understood, can it be properly applied, and the results trusted. Algorithms are often taught side by side without showing the similarities and differences between them. This book addresses the commonalities, and aims to give a thorough and in-depth treatment and develop intuition, while remaining concise.

This useful reference should be an essential on the bookshelves of anyone employing machine learning techniques.

Chapman and Hall/CRC
Market: Computer Science & Engineering
August 2019: 235 x 156: 334pp
Hb: 978-0-815-38420-5: **£120.00**
Pb: 978-0-815-38410-6: **£44.99**
eBook: 978-1-351-20475-0
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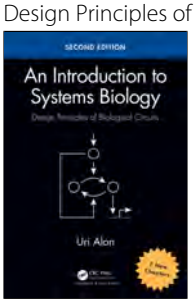
2nd Edition • TEXTBOOK

An Introduction to Systems Biology

Design Principles of Biological Circuits



Uri Alon

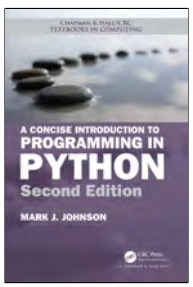
Series: Chapman & Hall/CRC Computational Biology Series

Written for students and researchers in systems biology, the second edition of this best-selling textbook continues to offer a clear presentation of design principles that govern the structure and behavior of biological networks. It highlights simple, recurring circuit elements that make up the regulation of cells and tissues. Rigorously classroom-tested, the book contains new additions and revisions for better flow. This edition includes seven new chapters on exciting advances made in the last decade, and over double the number of exercises.

Chapman and Hall/CRC
Market: Bioinformatics
August 2019: 254 x 178: 342pp
Hb: 978-1-138-49011-6: **£140.00**
Pb: 978-1-439-83717-7: **£54.99**
eBook: 978-0-429-28332-1
Prev. Ed Pb: 978-1-584-88642-6
* For **full contents** and more information, visit: **www.routledge.com/9781439837177**

2nd Edition • TEXTBOOK • READER

A Concise Introduction to Programming in Python



Mark J. Johnson, North Carolina State University, USA.

Series: Chapman & Hall/CRC Textbooks in Computing

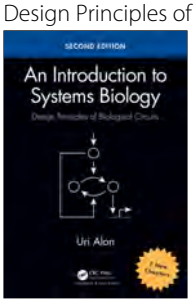
A Concise Introduction to Programming in Python, Second Edition provides a hands-on and accessible introduction to writing software in Python, with no prior programming experience required. The text offers sections designed for approximately one class period each, and proceeds gradually from procedural to object-oriented design. Examples, exercises, and projects are included from diverse application domains, including finance, biology, image processing, and textual analysis. It also includes a brief "How-To" sections that introduce optional topics students may be interested in exploring. The text is written to be read, making it a good fit in flipped classrooms.

Chapman and Hall/CRC
Market: Information Technology
March 2018: 235 x 156: 227pp
Hb: 978-1-138-08255-7: **£130.00**
Pb: 978-1-138-08258-8: **£42.99**
eBook: 978-1-315-11242-8
* For **full contents** and more information, visit: **www.routledge.com/9781138082588**

2nd Edition • TEXTBOOK

An Introduction to Systems Biology

Design Principles of Biological Circuits



Uri Alon

Series: Chapman & Hall/CRC Computational Biology Series

Written for students and researchers in systems biology, the second edition of this best-selling textbook continues to offer a clear presentation of design principles that govern the structure and behavior of biological networks. It highlights simple, recurring circuit elements that make up the regulation of cells and tissues. Rigorously classroom-tested, the book contains new additions and revisions for better flow. This edition includes seven new chapters on exciting advances made in the last decade, and over double the number of exercises.

Chapman and Hall/CRC
Market: Bioinformatics
July 2019: 254 x 178: 342pp
Hb: 978-1-138-49011-6: **£140.00**
Pb: 978-1-439-83717-7: **£54.99**
eBook: 978-0-429-28332-1
* For **full contents** and more information, visit: **www.routledge.com/9781138490116**

2nd Edition • TEXTBOOK • READER

Artificial Intelligence

With an Introduction to Machine Learning, Second Edition

Richard E. Neapolitan, Northeastern Illinois University, Illinois, USA and **Xia Jiang**, University of Pittsburgh, Pennsylvania, USA

Series: Chapman & Hall/CRC Artificial Intelligence and Robotics Series

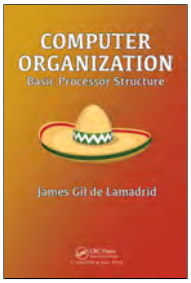
The first edition of this popular textbook, *Contemporary Artificial Intelligence*, provided an accessible and student friendly introduction to AI. This fully revised and expanded update retains the same accessibility and problem-solving approach, while providing new material and methods, including neural networks and deep learning. Suitable for undergraduate and beginning graduate students, this class-tested textbook provides students with key AI methods and algorithms for solving challenging problems involving systems that behave intelligently in specialized domains such as medical and software diagnostics, financial decision making, speech and text recognition, genetic analysis, and more.

Chapman and Hall/CRC
Market: Computer Science & Engineering
May 2018: 254 x 178: 466pp
Hb: 978-1-138-50238-3: **£105.00**
Pb: 978-0-367-57164-1: **£42.99**
eBook: 978-1-315-14486-3
Prev. Ed Hb: 978-1-439-84469-4
* For **full contents** and more information, visit: **www.routledge.com/9781138502383**

TEXTBOOK • READER

Computer Organization

Basic Processor Structure



James Gil de Lamadrid, Bowie State University, MD, USA

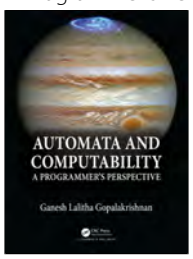
This class-tested textbook is based on the author's decades of teaching the topic to both undergraduate and graduate students. The main questions the book tries to answer are: how is a processor structured, and how does the processor function, in a general-purpose computer? Focusing solely on the information that is essential to the field, this text provides fundamental concepts and examples on computer organization. Using a top-down approach, the text begins at digital circuitry level, and works up to the machine language level. Numerous architectures are also covered, including key design issues.

Chapman and Hall/CRC
Market: Computer Science & Engineering
February 2018: 235 x 156: 394pp
Hb: 978-0-815-36246-3: **£180.00**
Pb: 978-1-498-79951-5: **£68.99**
eBook: 978-1-315-27757-8
* For **full contents** and more information, visit: **www.routledge.com/9781498799515**

TEXTBOOK • READER

Automata and Computability

A Programmer's Perspective



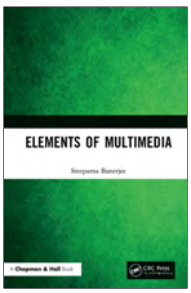
Ganesh Gopalakrishnan

This class-tested textbook provides a comprehensive and accessible introduction to the theory of automata and computation. The author uses illustrations, engaging examples, and historical remarks to make the material interesting and relevant for students. It incorporates modern/handy ideas, such as derivative-based parsing and a Lambda reducer showing the universality of Lambda calculus. The book also shows how to sculpt automata by making the regular language conversion pipeline available through a simple command interface. A Jupyter notebook will accompany the book to feature code, YouTube videos, and other supplements to assist instructors and students.

Chapman and Hall/CRC
Market: Computer Science & Engineering
February 2019: 279 x 216: 348pp
Hb: 978-1-138-55242-5: **£74.99**
Pb: 978-0-367-65654-6: **£42.99**
eBook: 978-1-315-14817-5
* For **full contents** and more information, visit: **www.routledge.com/9781138552425**

TEXTBOOK • READER

Elements of Multimedia



Sreeparna Banerjee

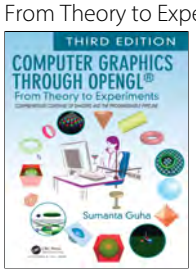
This book integrates many aspects of multimedia taught in different courses under one title. It is a very suitable textbook for adaptation for a single course in multimedia. In addition, it is written to provide a lucid, yet technical discourse on the different aspects to be taught to students with diverse backgrounds.

Chapman and Hall/CRC
Market: Computer Science & Engineering
May 2019: 235 x 156: 203pp
Hb: 978-1-138-36037-2: **£79.99**
eBook: 978-0-429-43320-7
* For **full contents** and more information, visit: **www.routledge.com/9781138360372**

3rd Edition • TEXTBOOK • READER

Computer Graphics Through OpenGL®

From Theory to Experiments



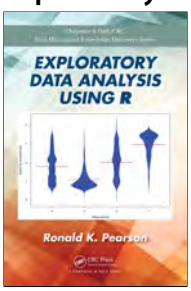
Sumanta Guha, Asian Institute of Technology, Thailand

This textbook presents a comprehensive introduction to computer graphics that uses an active learning style to teach key concepts. Equally emphasizing theory and practice, the book provides an understanding not only of the principles of 3D computer graphics, but also the use of the OpenGL® Application Programming Interface (API) to code 3D scenes and animation, including games and movies.

Chapman and Hall/CRC
Market: Computer Science & Engineering
January 2019: 279 x 216: 760pp
Hb: 978-1-138-61264-8: **£120.00**
eBook: 978-0-429-46417-1
Prev. Ed Hb: 978-1-482-25839-4
* For **full contents** and more information, visit: **www.routledge.com/9781138612648**

TEXTBOOK • READER

Exploratory Data Analysis Using R



Ronald K. Pearson, GeoVera Holdings, Inc., CA, USA

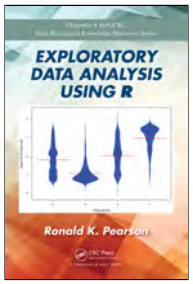
Series: Chapman & Hall/CRC Data Mining and Knowledge Discovery Series

This textbook introduces exploratory data analysis (EDA) and covers the range of interesting features we can expect to find in data. The book also explores the practical mechanics of using R to do EDA. Based on the author's course at the University of Connecticut, the book assumes no prior exposure to data analysis or programming, and is designed to be as non-mathematical as possible. Exercises are included throughout, and a Solutions Manual will be available. The author will also provide a supplemental R package through the Comprehensive R Archive Network that will include implementations of some of the features in this book, along with data examples, tools, and datasets.

Chapman and Hall/CRC
Market: Computer Science & Engineering
September 2018: 235 x 156: 548pp
Hb: 978-1-138-48060-5: **£130.00**
Pb: 978-0-367-57156-6: **£42.99**
eBook: 978-1-315-38211-1
Pack - Book and Ebook: 978-1-498-73023-5: **£56.99**
* For **full contents** and more information, visit: **www.routledge.com/9781498730235**

TEXTBOOK • READER

Exploratory Data Analysis Using R



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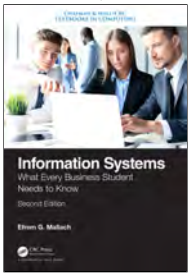
Chapman and Hall/CRC
Market: Computer Science & Engineering
May 2018: 235 x 156: 548pp
Hb: 978-1-138-48060-5: **£130.00**
Pb: 978-0-367-57156-6: **£42.99**
eBook: 978-1-315-38211-1
* For **full contents** and more information, visit: **www.routledge.com/9781138480605**

2nd Edition • TEXTBOOK • READER

Information Systems

What Every Business Student Needs to Know, Second Edition



Efrem G. Mallach, Rhode Island College, Providence, and Kea Company, New Bedford, Massachusetts, USA

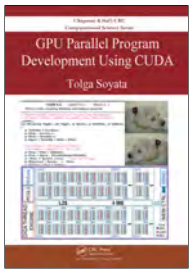
Series: Chapman & Hall/CRC Textbooks in Computing

Most information systems textbooks overwhelm business students with overly technical information they may not need in their careers. This textbook takes a new approach to the required information systems course for business majors. For each topic covered, the text highlights key "Take-Aways" that alert students to material they will need to remember during their careers. Sections titled "Where You Fit In" and "Why This Chapter Matters" explain how the topics being covered will impact students on the job. Review questions, discussion questions, and summaries are also included. The second edition will be updated to include new technology, along with a new running case study.

CRC Press
Market: Computer Science
February 2020: 254 x 178: 390pp
Hb: 978-0-367-18354-7: **£150.00**
Pb: 978-0-367-18353-0: **£59.99**
eBook: 978-0-429-06101-1
* For **full contents** and more information, visit: **www.routledge.com/9780367183530**

TEXTBOOK • READER

GPU Parallel Program Development Using CUDA



Tolga Soyata, University at Albany, SUNY, USA

Series: Chapman & Hall/CRC Computational Science

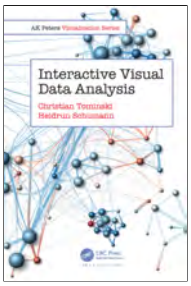
This book teaches GPU programming by showing differences among families of GPUs. It emphasizes concepts that will remain relevant for a long time, rather than concepts that are platform-specific, while emphasizing the performance improvements that can be obtained from platform-dependent code.

This three-part book starts by explaining parallelism using CPU multi-threading in Part I and teaches GPU massive parallelism in Part II by providing comparisons to CPU multi-threading. Part III of the book explores popular CUDA libraries, the OpenCL programming language, GPU programming using other programming languages and API libraries, and the deep learning library cuDNN.

Chapman and Hall/CRC
Market: Computer Science & Engineering
February 2018: 254 x 178: 440pp
Hb: 978-1-498-75075-2: **£58.99**
Pb: 978-0-367-57224-2: **£42.99**
* For **full contents** and more information, visit: **www.routledge.com/9781498750752**

TEXTBOOK • READER

Interactive Visual Data Analysis



Christian Tominski, University of Rostock, Germany and **Heidrun Schumann**, University of Rostock, Institute of Computer Science, Germany

Series: AK Peters Visualization Series

In the age of big data, being able to make sense of data is an important key to success. *Interactive Visual Data Analysis* advocates the synthesis of visualization, interaction, and automatic computation to facilitate insight generation and knowledge crystallization from large and complex data.

The authors present a top-down perspective on interactive visual data analysis with a focus on concise and clean terminology. Many real-world examples and rich illustrations make the book accessible to a broad interdisciplinary audience from students, to experts in the field, to practitioners in data-intensive application domains.

A K Peters/CRC Press
Market: Computer Science & Engineering
April 2020: 235 x 156: 362pp
Hb: 978-1-498-75398-2: **£140.00**
Pb: 978-0-367-89875-5: **£52.99**
eBook: 978-1-315-15270-7
* For **full contents** and more information, visit: **www.routledge.com/9780367898755**

TEXTBOOK • READER

Graphic Design

Learn It, Do It

Katherine A. Hughes

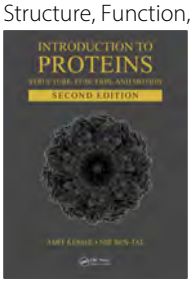
This book is an introduction to the fundamentals of graphic design and the software applications used to put these concepts into practice, specifically the Adobe Creative Suite. The book is intended for production-oriented audiences, those interested in the what, why and how of graphic design. Based on the approach of learning then doing, which in this environment translates to reviewing the basics then experimenting with design within the Adobe applications. A series of discussions and open-ended activities are included at the end of each chapter intended to further the conversation and invite creative expression of design using the Adobe Creative Suite.

CRC Press
Market: Computer Science & Engineering
June 2019: 229 x 152: 406pp
Hb: 978-0-367-07536-1: **£120.00**
Pb: 978-0-367-07534-7: **£52.99**
eBook: 978-0-429-02125-1
* For **full contents** and more information, visit: **www.routledge.com/9780367075347**

2nd Edition • TEXTBOOK

Introduction to Proteins

Structure, Function, and Motion, Second Edition



Amit Kessel and **Nir Ben-Tal**, Tel Aviv University, Israel

Series: Chapman & Hall/CRC Computational Biology Series

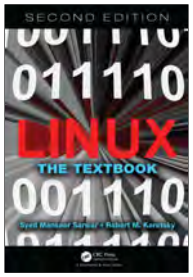
The book aims at providing both students and scientists with an extensive, interesting and cutting edge description of the protein world and its applications. The second edition will contain new developments on membrane proteins, more lab nethods for studying proteins, and expanded material on cryoEM. A key goal of the second edition is to make the book more student friendly. To this end, a new chapter will be added on enzyme catalysis and its applications to protein engineering and drug design. In addition, exercises will now be included at the end of each chapter.

Chapman and Hall/CRC
Market: Physics
April 2018: 279 x 216: 988pp
Hb: 978-1-498-74717-2: **£79.99**
eBook: 978-1-498-74718-9
* For **full contents** and more information, visit: **www.routledge.com/9781498747172**

2nd Edition • TEXTBOOK • READER

Linux

The Textbook, Second Edition



Syed Mansoor Sarwar, Punjab University College of Information Technology (PUCIT), University of the Punjab and **Robert M Koretsky**

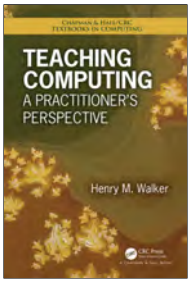
Linux: The Textbook, Second Edition provides comprehensive coverage of the contemporary use of the Linux operating system for every level of student or practitioner, from beginners to advanced users. The text clearly illustrates system-specific commands and features using Debian-family Debian, Ubuntu, and Linux Mint, and RHEL-family CentOS, and stresses universal commands and features that are critical to all Linux distributions.

Chapman and Hall/CRC
Market: Information Technology
October 2018: 254 x 178: 688pp
Hb: 978-1-138-71008-5: **£94.99**
Pb: 978-0-367-57106-1: **£42.99**
eBook: 978-1-315-19685-5
* For **full contents** and more information, visit: **www.routledge.com/9781138710085**

TEXTBOOK • READER

Teaching Computing

A Practitioner's Perspective



Henry M. Walker, Grinnell College, Iowa, USA

Teaching can be intimidating for beginning faculty. Some graduate schools and some computing faculty provide guidance and mentoring, but many do not. Often, a new faculty member is assigned to teach a course, with little guidance, input, or feedback. Based upon over 40-years of the author's teaching experience, and informed by computing-education research, this book addresses numerous components of teaching by providing a solid resource for both new and experienced computing faculty. The book serves as a practical, easy-to-use resource, covering numerous tips, techniques and perspectives in a collection of focused down-to-earth chapters.

CRC Press
Market: Computer Science & Engineering
April 2018: 254 x 178: 514pp
Hb: 978-1-138-54978-4: **£120.00**
Pb: 978-1-138-03443-3: **£64.99**
eBook: 978-1-315-26910-8
* For **full contents** and more information, visit: **www.routledge.com/9781138034433**

2nd Edition • TEXTBOOK • READER

Mastering Modern Linux

Paul S. Wang, Kent State University, OH, USA

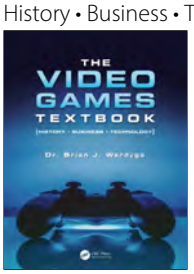
This popular textbook has been well received in the marketplace, since its publication in 2010. The Linux system is now much more widely used and have evolved in significant ways, since the publication of the first edition. Popular Linux distributions have moved ahead and matured. New distributions, such as Mint, have become widely used. Linux is now much more GUI (graphical user interface) oriented and can compete with MS Windows and MAC OS on many levels. The book will be updated to reflect all of these recent developments and advances, while preserving the overall structure and most of the topics in the first edition.

Chapman and Hall/CRC
Market: Information Technology
June 2018: 254 x 178: 384pp
Hb: 978-0-815-38111-2: **£120.00**
Pb: 978-0-815-38098-6: **£56.99**
eBook: 978-1-351-21130-7
* For **full contents** and more information, visit: **www.routledge.com/9780815380986**

TEXTBOOK • READER

The Video Games Textbook

History • Business • Technology



Brian J. Wardyga

The Video Games Textbook takes the history of video games to another level, with visually-stimulating, comprehensive, and chronological chapters that are relevant and easy to read for a variety of students. Every chapter is a journey into a different era or area of gaming, where readers emerge with a strong sense of how video games evolved, why they succeeded or failed, and the impact they had on the industry and human culture. Written to capture the attention and interest of both domestic and international college students, each chapter contains a list of objectives and key terms, illustrative timelines, arcade summaries, images and technical specifications of all major consoles.

A K Peters/CRC Press
Market: Games and Animation
September 2018: 279 x 216: 450pp
Hb: 978-0-815-39091-6: **£120.00**
Pb: 978-0-815-39089-3: **£56.99**
eBook: 978-1-351-17236-3
* For **full contents** and more information, visit: **www.routledge.com/9780815390893**

TEXTBOOK • READER

Security for Software Engineers

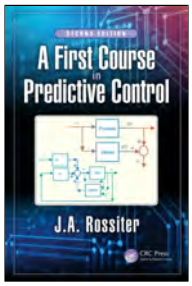
James N. Helfrich, Brigham Young University, Idaho, USA

Most textbooks about Computer Security targets end-users, or CIT/IT professionals. Few if any truly target undergraduate software engineering students. This book is designed to address this shortcoming. It is divided into four units, each targeting activities that a software engineer will likely be involved in within industry. These areas are: attack vectors, code hardening, privacy, and social engineering. Each topic is explored from a theoretical and a practical-application standpoint. This text will equip students to make knowledgeable security decisions, be productive members of a security review team, and write code that protects a user's information assets.

Chapman and Hall/CRC
Market: Information Technology
December 2018: 279 x 216: 350pp
Hb: 978-1-138-58382-5: **£79.99**
Pb: 978-0-367-65681-2: **£42.99**
eBook: 978-0-429-50647-5
* For **full contents** and more information, visit: **www.routledge.com/9781138583825**

2nd Edition • TEXTBOOK • READER

A First Course in Predictive Control



J.A. Rossiter, University of Sheffield, UK

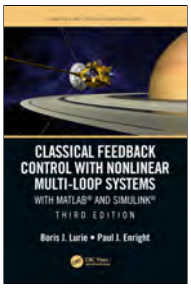
The book presents a significant expansion in depth and breadth of the previous edition. It includes substantially more numerical illustrations and copious supporting MATLAB code that the reader can use to replicate illustrations or build his or her own. The code is deliberately written to be as simple as possible and easy to edit. The book is an excellent starting point for any researcher to gain a solid grounding in MPC concepts and algorithms before moving into application or more advanced research topics. Sample problems for readers are embedded throughout the chapters, and in-text questions are designed for readers to demonstrate an understanding of concepts through numerical simulation.

CRC Press
Market: Engineering - Electrical
April 2018: 234x156: 426pp
Hb: 978-1-138-09934-0: **£89.99**
eBook: 978-1-315-10412-6
Prev. Ed Hb: 978-0-849-31291-5
* For **full contents** and more information, visit: **www.routledge.com/9781138099340**

3rd Edition • TEXTBOOK • READER

Classical Feedback Control with Nonlinear Multi-Loop Systems

With MATLAB® and Simulink®, Third Edition



Boris J. Lurie, California Institute of Technology, Pasadena, USA and **Paul Enright**, California Institute of Technology, Pasadena, USA

Series: Automation and Control Engineering

This book describes the design of high-performance feedback control systems, emphasizing the frequency-domain approach widely used in practical engineering. It presents design methods for high-order nonlinear single- and multi-loop controllers with efficient analog and digital implementations. Bode integrals are employed to estimate the available system performance and to determine the ideal frequency responses that maximize the disturbance rejection and feedback bandwidth. This book serves as a unique text for an advanced course in control system engineering, and as a valuable reference for practicing engineers competing in today's industrial environment.

CRC Press
Market: Engineering - Electrical
August 2019: 254 x 178: 594pp
Hb: 978-1-138-54114-6: **£110.00**
eBook: 978-1-351-01185-3
Prev. Ed Hb: 978-1-439-86017-5
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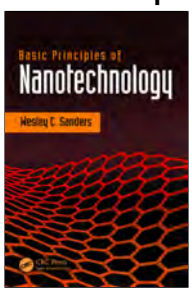
TEXTBOOK • READER

Basic Principles of Nanotechnology



Wesley C. Sanders, Salt Lake Community College, UT, USA

The book allows the reader to have a basic understanding of the structure and properties of nanoscale materials routinely used in nanotechnology-based research and industries. To add, the book describes the operation of nanoscale transistors and the processes used to fabricate the devices. Additionally, it presents research involving the use of carbon nanotubes, graphene, and molecules to create non-silicon based electronic devices. It aims to provide an understanding of the operation of the most frequently used fabrication and characterization procedures, such as scanning electron microscopy, atomic force microscopy, etch, e-beam lithography, and photolithography.

CRC Press
Market: Engineering - Electrical
July 2018: 235 x 156: 194pp
Hb: 978-1-138-48828-1: **£150.00**
Pb: 978-1-138-48361-3: **£56.99**
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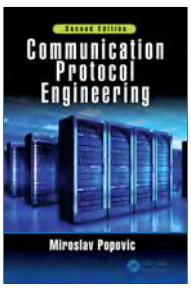
2nd Edition • TEXTBOOK • READER

Communication Protocol Engineering



Miroslav Popovic, University of Novi Sad, Serbia

The book aims to enable the reader to master the engineering of communication protocols, which are amply present nowadays in mobile phones, tablets, laptops, smart appliances, and service providers' datacenters and clouds. Readers will acquire the theoretical knowledge and practical skills to successfully design, implement, test, and verify their solutions. The key benefits of the new edition align with the latest standard for conformance testing, TTCN-3, along with updated chapters. It explains process algebra CSP and how to model, simulate, and automatically verify CSP models in PAT.

CRC Press
Market: Engineering - Electrical
February 2018: 235 x 156: 565pp
Hb: 978-1-138-55812-0: **£115.00**
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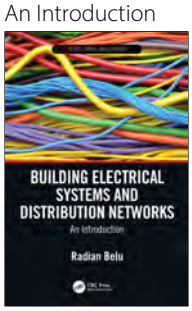
TEXTBOOK • READER

Building Electrical Systems and Distribution Networks

An Introduction



Radian Belu, University of Alaska Anchorage, Alaska, USA

Series: Nano and Energy

This book covers all important, new and conventional aspects of building electrical systems, power distribution, lighting, transformers and rotating electric machines, wiring and building installations. Solved examples, end of chapter questions and problems, case studies, and design considerations are included in each chapter, highlighting concepts, diverse and critical features of building and industrial electrical systems. Support materials are included for interested instructors.

CRC Press
Market: Electrical Engineering
March 2020: 254 x 178: 606pp
Hb: 978-1-482-26351-0: **£120.00**
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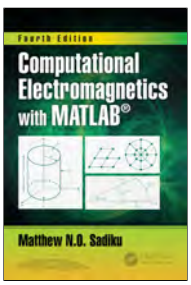
4th Edition • TEXTBOOK • READER

Computational Electromagnetics with MATLAB, Fourth Edition



Matthew N.O. Sadiku, Prairie View A&M University, Texas, USA

This fourth edition of the text reflects the continuing increase in awareness and use of computational electromagnetics and incorporates advances and refinements made in recent years. Most notable among these are the improvements made to the standard algorithm for the finite-difference time-domain (FDTD) method and treatment of absorbing boundary conditions in FDTD, finite element, and transmission-line-matrix methods. It teaches the readers how to pose, numerically analyze, and solve EM problems, to give them the ability to expand their problem-solving skills using a variety of methods, and to prepare them for research in electromagnetism.

CRC Press
Market: Engineering - Electrical
July 2018: 254 x 178: 687pp
Hb: 978-1-138-55815-1: **£130.00**
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Prev. Ed Hb: 978-1-420-06309-7
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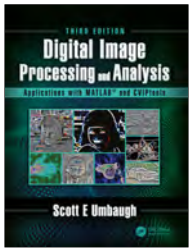
3rd Edition • TEXTBOOK • READER

Digital Image Processing and Analysis

Applications with MATLAB and CVIPtools



Scott E Umbaugh, Southern Illinois University, Edwardsville, USA

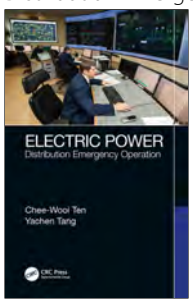
This textbook takes an engineering approach to image processing and analysis with more added examples and images than the previous edition--providing more material for illustrating the concepts throughout, along with new PowerPoint slides. The application development will be expanded and updated, and the Applications chapter provides step-by-step tutorial examples for this type of development. The book is divided into five major parts: Introduction to Digital Image Processing (DIP); Digital Image Analysis and Computer Vision; Digital Image Processing and Human Vision; Application Development with the CVIP Matlab Toolbox and CVIPtools; Appendices.

CRC Press
Market: Engineering - Electrical
December 2017: 279 x 216: 897pp
Hb: 978-1-498-76602-9: **£120.00**
eBook: 978-1-351-22837-4
Prev. Ed Hb: 978-1-439-80205-2
* For **full contents** and more information, visit: **www.routledge.com/9781498766029**

TEXTBOOK • READER

Electric Power

Distribution Emergency Operation



Chee-Wooi Ten, Michigan Technological University, USA and **Yachen Tang**, GEIRI North America, USA

Provides the fundamentals of distribution emergency operation using graph-theoretic approach and exploration of subsystem(s) that address the operational aspects of fault occurrence to determine the possible feeder reconfiguration. Topics include: (1) Data extraction from geographic information systems (GIS), (2) Graph modeling of distribution feeders, (3) Programming for backward/forward sweeping unbalanced power flow, (4) Short circuit analysis and fault localization, (5) Fault isolation and service restoration, (6) Outage management and crew coordination, (7) Trouble call tickets and escalation to search for fault, and (8) Emerging topics of distribution management systems (DMS).

CRC Press
Market: Engineering - Electrical
September 2018: 235 x 156: 268pp
Hb: 978-1-498-79894-5: **£110.00**
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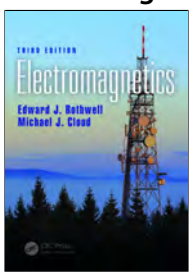
3rd Edition • TEXTBOOK • READER

Electromagnetics



Edward J. Rothwell, Michigan State University, East Lansing, USA and **Michael J. Cloud**, Lawrence Technological University, Southfield, Michigan, USA

Providing an ideal transition from introductory to advanced concepts, this book builds a foundation that allows electrical engineers to confidently proceed with the development of advanced EM studies, research, and applications. New topics include quasistatics, vector spherical wave functions, and wave matrices. Several application-oriented sections covering guided waves and transmission lines, particle dynamics, shielding, electromagnetic material characterization, and antennas have also been added. Mathematical appendices present helpful background information in the areas of Fourier transforms, dyadics, and boundary value problems.

CRC Press
Market: Engineering - Electrical
March 2018: 254 x 178: 1005pp
Hb: 978-1-498-79656-9: **£110.00**
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TEXTBOOK • READER

Elementary Concepts of Power Electronic Drives

K Sundareswaran, Department of Electrical and Electronics Engineering, National Institute of Technology, Trichirapalli, Tamil Nadu, INDIA

"Elementary Concepts of Power Electronic Drives" aims to facilitate a smooth transition from basic knowledge of electric machines and power electronics to the world of power electronics. This book emphasizes only on relevant principles of electric motors and power electronics and then integrates such facts to bring the principle power electronic control of electric motors. Salient features of motors and power converter operations are crisply mentioned at appropriate places. Different case studies and solved numerical examples are provided in large numbers including illustrations through commonly seen electric drives.

CRC Press
Market: POWER ELECTRONICS
March 2019: 254 x 178: 389pp
Hb: 978-1-138-39049-2: **£89.99**
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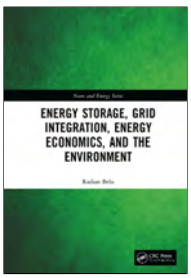
TEXTBOOK • READER

Energy Storage, Grid Integration, Energy Economics, and the Environment



Radian Belu, University of Alaska Anchorage, Alaska, USA

Series: Nano and Energy

The book will cover energy storage systems, bioenergy and hydrogen economy, grid integration of the renewable energy systems, distributed generation, economic analysis and environmental impacts of renewable energy systems. Solutions manual and Power Point slides are included for instructors.

CRC Press
Market: Electrical Engineering
September 2019: 254 x 178: 376pp
Hb: 978-0-367-26140-5: **£74.99**
eBook: 978-0-429-32243-3
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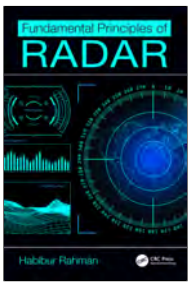
TEXTBOOK • READER

Fundamental Principles of Radar



Habibur Rahman

This book provides a comprehensive set of radar principles and covers a broad spectrum of radar types. The book will help readers to become confident in first-order radar design, and fundamental technical issues. Most chapters are self-contained and can be very useful for readers seeking selective topics of study. The text includes examples and exercises to reinforce the concepts presented, and illustrates the wide range of radar applications. In addition to its use in undergraduate or junior graduate teaching, this book should find use for engineers, working in industry desiring to have first exposure to fundamental principles of radar.

CRC Press
Market: Electrical Engineering
May 2019: 254 x 178: 339pp
Hb: 978-1-138-38779-9: **£120.00**
eBook: 978-0-429-27947-8
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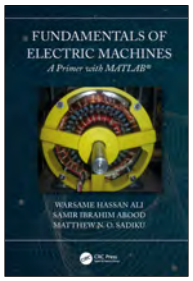
TEXTBOOK • READER

Fundamentals of Electric Machines: A Primer with MATLAB

A Primer with MATLAB



Warsame Hassan Ali, Prairie View A&M University, Texas, USA, **Matthew N. O. Sadiku**, Prairie View A&M University, Texas, USA and **Samir Abood**, Prairie View A&M University, Texas, USA

An electric machine is a device that converts mechanical energy into electrical energy or vice versa. It can take the form of an electric generator, electric motor, or transformer. Electric generators produce virtually all electric power we use all over the world. Electric machine blends the three major areas of electrical engineering: power, control and power electronics. This book presents the relation of power quantities for the machine as the current, voltage power flow, power losses, and efficiency. This book will provide a good understanding of the behavior and its drive, beginning with the study of salient features of electrical dc and ac machines.

CRC Press
Market: Electrical Engineering
June 2019: 254 x 178: 410pp
Hb: 978-0-367-25098-0: **£74.99**
eBook: 978-0-429-29061-9
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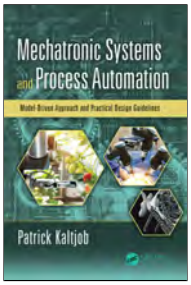
TEXTBOOK • READER

Mechatronic Systems and Process Automation

Model-Driven Approach and Practical Design Guidelines



Patrick O.J. Kaltjob, Ecole Nationale Supérieure Polytechnique, Cameroon

The book discusses the concept of process automation and mechatronic system design, while offering a unified approach and methodology for the modeling, analysis, automation and control, networking, monitoring, and sensing of various machines and processes from single electrical-driven machines to large-scale industrial process operations. This step-by-step guide covers design applications from various engineering disciplines (mechanical, chemical, electrical, computer, biomedical) through real-life mechatronics problems and industrial automation case studies with topics such as manufacturing, power grid, cement production, wind generator, oil refining, incubator, etc.

CRC Press
Market: Engineering - Mechanical
March 2018: 235 x 156: 467pp
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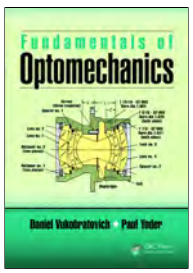
TEXTBOOK • READER

Fundamentals of Optomechanics



Daniel Vukobratovich, Raytheon Systems, Tucson, Arizona, USA and **Paul Yoder**, Norwalk, Connecticut, USA

Series: Optical Sciences and Applications of Light

This textbook will provide the fundamentals of optomechanics. Starting from the basics, this textbook will lead you through the opto-mechanical design process, discussing materials selection, principles of kinematic design, as well as mounting of windows, individual lenses, and multiple lenses. Techniques for mounting prisms, mirror performance, and design and mounting of mirrors will be included. Written by the two top scientists in the field, this stand-alone, student-friendly textbook has been course-tested and will include homework problems as well as a solutions manual for adopting professors.

CRC Press
Market: Physics
February 2018: 254 x 178: 462pp
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2nd Edition • TEXTBOOK • READER

MicroMechatronics, Second Edition

Kenji Uchino, Pennsylvania State University, USA

After Uchino's introduction of a new terminology, 'Micromechatronics' in 1979 for describing the application area of 'piezoelectric actuators', the rapid advances in semiconductor chip technology have led to a new terminology MEMS ; (micro-electro-mechanical-system) or even NEMS (nano-electro-mechanicalsystem) to describe mainly thin film sensor/actuator devices, a narrower area of micromechatronics coverage. New technologies, product developments and commercialization are providing the necessity of this major revision. In particular, the progresses in high power transducers, loss mechanisms in smart materials, energy harvesting and computer simulations are significant.

CRC Press
Market: Engineering - Electrical
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Hb: 978-0-367-20231-6: **£120.00**
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3rd Edition • TEXTBOOK • READER

Image and Video Compression for Multimedia Engineering

Fundamentals, Algorithms, and Standards, Third Edition

Yun-Qing Shi, New Jersey Institute of Technology, Newark, USA and **Huifang Sun**, Mitsubishi Electric Research Lab, Cambridge, Massachusetts, Mitsubishi Electric Research Lab, Massachusetts, USA

Series edited by **Philip A. Laplante**

Series: Image Processing Series

The latest edition provides a comprehensive foundation for image and video compression. It covers HEVC/H.265 and future video coding activities, in addition to Internet Video Coding. The book features updated chapters and content, along with several new chapters and sections. It adheres to the current international standards, including the JPEG standard.

CRC Press
Market: Engineering - Electrical
March 2019: 254 x 178: 664pp
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Prev. Ed Hb: 978-0-849-37364-0
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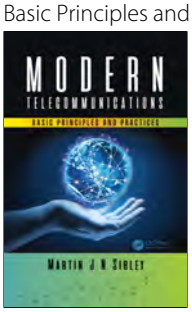
TEXTBOOK • READER

Modern Telecommunications

Basic Principles and Practices



Martin J N Sibley, University of Huddersfield, West Yorkshire, United Kingdom

This is an introductory text that will equip readers with the necessary tools to study telecommunications further. It explains the fundamentals and background behind digital TV, radio, cell phones, and satellites as well as the legacy analogue transmissions. It covers digital modulation and analogue communications as this is something many people still use (VHF FM for example). The book also clearly explains the mathematics and simplifies the process to make it more approachable to students.

CRC Press
Market: Engineering - Electrical
April 2018: 235 x 156: 202pp
Hb: 978-1-138-57882-1: **£110.00**
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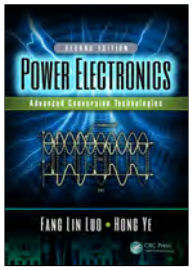
2nd Edition • TEXTBOOK • READER

Power Electronics

Advanced Conversion Technologies, Second Edition



Fang Lin Luo, AnHui University, China and Nanyang Technological University, Singapore and **Hong Ye**, Nanyang Technological University, Singapore

Recently, many renewable energy systems, such as solar-panel and wind-turbine energy systems, have used DC/DC converters and DC/AC inverters. By discussing a wide range of converters, readers can find suitable topologies for their applications and even invent new topologies by using suggested methods in the text. This edition features an entirely new chapter on best switching angles to obtain lowest THD for multilevel DC/AC inverters. All other chapters have been updated and include homework problems throughout. With case studies from GE, AEG, Simplatroll Ltd, and Chinese Power Manufacturing Co., the reader will be exposed to practical applications in industry and real-world settings.

CRC Press
Market: Engineering - Electrical
December 2017: 254x178: 735pp
Hb: 978-1-138-73532-3: **£130.00**
Pb: 978-0-367-65615-7: **£49.99**
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Prev. Ed Hb: 978-1-420-09429-9
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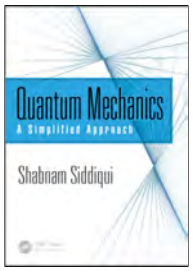
TEXTBOOK • READER

Quantum Mechanics

A Simplified Approach



Shabnam Siddiqui

Readers are introduced to the early ideas and experiments that lead to the theory of quantum mechanics in the first two chapters. Every chapter presents quantum ideas in a structured way, with a comparison between quantum and classical concepts. Simulations are provided to aid in the visualization of the quantum phenomenon, and for a meaningful understanding of mathematics. This approach may lead to development of "quantum mechanical intuition", as well as learning mathematical techniques for problem solving. Most importantly, the book is not flooded with numerous topics that makes the reader confused and distracted, rather most important topics are discussed at a more deeper level.

CRC Press
Market: Physics
October 2018: 254 x 178: 240pp
Hb: 978-1-138-19726-8: **£115.00**
eBook: 978-1-315-22315-5
* For **full contents** and more information, visit: **www.routledge.com/9781138197268**

TEXTBOOK • READER

Renewable Energy Systems

Fundamentals and Source Characteristics

Radian Belu, University of Alaska Anchorage, Alaska, USA

Series: Nano and Energy

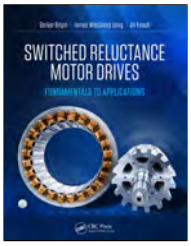
The Renewable Energy Systems: Fundamentals and Source Characteristics is a set book coming in two volumes. The first volume is "Fundamentals and Source Characteristics of Renewable Energy Systems and the second volume is called "Energy Storage, Grid Integration, Energy Economics and the Environment".

CRC Press
Market: Energy & Clean Technology
October 2019: 254 x 178: 810pp
Hb: 978-1-482-25744-1: **£120.00**
* For **full contents** and more information, visit: **www.routledge.com/9781482257441**

TEXTBOOK • READER

Switched Reluctance Motor Drives

Fundamentals to Applications



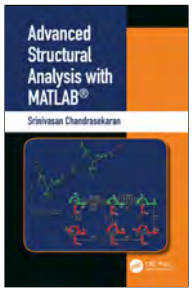
Edited by **Berker Bilgin**, McMaster University, Hamilton, ON, Canada, **James Weisheng Jiang**, McMaster Automotive Resource Centre (MARC), Ontario, Canada and **Ali Emadi**, McMaster University, Hamilton, ON, Canada

This is a comprehensive textbook covering major aspects of switched reluctance motor drives in detail. It also provides a macroscopic view of the use of electric motors in different sectors to explore the role of SRM in industry. Utilizing higher efficiency, lower cost, and robust electric motors will increase the level of electrification in industry, improve overall system efficiency, and reduce the operational cost, the electricity consumption, and emissions. This is where switched reluctance machine (SRM) can play a significant role. One of the main advantages of SRM is its low-cost and simple construction, which can provide reliable operation in a harsh environment.

CRC Press
Market: Engineering - Electrical
November 2018: 254 x 178: 824pp
Hb: 978-1-138-30459-8: **£150.00**
eBook: 978-0-203-72999-1
* For **full contents** and more information, visit: **www.routledge.com/9781138304598**

TEXTBOOK • READER

Advanced Structural Analysis with MATLAB®



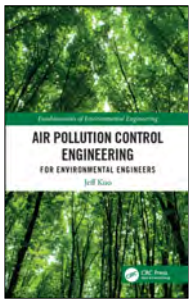
Srinivasan Chandrasekaran, Dept of Ocean Engineering, Indian Institute of Technology, Madras

Recent advancements in the selection of various geometric structural forms demand understanding of structural analysis using computer-aided tools. This book presents various important aspects of computer-aided tools and programming for advanced structural analysis, and includes exercises, exams with solutions, and MATLAB input-output code to provide a complete understanding of concepts. The content has been well received by graduate students and faculty colleagues. Demand from the students for a full-length textbook motivated the author to develop the present book, which follows a classroom model of explaining the concepts through clear explanations, illustrations, and tutorials.

CRC Press
Market: Civil Engineering
December 2018: 235 x 156: 238pp
Hb: 978-0-367-02645-5: **£100.00**
eBook: 978-0-429-39854-4
* For **full contents** and more information, visit: **www.routledge.com/9780367026455**

TEXTBOOK • READER

Air Pollution Control Engineering for Environmental Engineers



Edited by **Jeff Kuo**, California State University, Fullerton, USA

Series: Fundamentals of Environmental Engineering

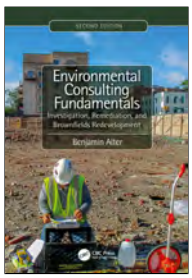
Air pollution control and air quality engineering are some of the key subjects in any environmental engineering curriculum. This book will cover topics that are fundamental to pollution control engineers and professionals, including air pollution and its management through regulatory approaches, calculating and estimating emissions, and appying control technologies for different forms of pollutants and emission characteristics for several key industries. In addition, it will include topics that address issues such as fugitive component leak detection and repair, odor containment and control, greenhouse gas emissions, and indoor air pollution, which are often not found in other similar books.

CRC Press
Market: Engineering - Environmental
December 2018: 235 x 156: 378pp
Hb: 978-1-138-03204-0: **£94.99**
eBook: 978-0-429-18579-3
* For **full contents** and more information, visit: **www.routledge.com/9781138032040**

2nd Edition • TEXTBOOK • READER

Environmental Consulting Fundamentals

Investigation, Remediation, and Brownfields Redevelopment, Second Edition



Benjamin Alter, GZA GeoEnvironmental, Inc., Fairfield, New Jersey, USA

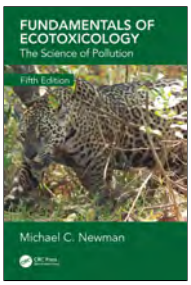
The second edition introduces the basic building blocks of environmental consulting by emphasizing the thought processes that go into designing an environmental study, interpreting the data, and selecting the next step for investigation or remediation. This edition is revised and updated with regard to recent technological advances and regulatory changes. It covers the latest environmental issues, including emerging contaminants, and adds a new chapter on Brownfields Redevelopment. It also includes problems and questions to be used for homework assignments or classroom discussions, and provides guidelines that useful for both students and practicing professionals.

CRC Press
Market: Engineering - Environmental
June 2019: 254 x 178: 440pp
Hb: 978-1-138-61320-1: **£110.00**
eBook: 978-0-429-46437-9
Prev. Ed Hb: 978-1-439-86890-4
* For **full contents** and more information, visit: **www.routledge.com/9781138613201**

5th Edition • TEXTBOOK • READER

Fundamentals of Ecotoxicology

The Science of Pollution, Fifth Edition



Michael C. Newman, College of William & Mary, Gloucester Point, Virginia, USA

This new edition is revised throughout, and adds a new chapter on natural resource damage assessment. It also adds more international coverage and case studies from around the world. Further, it addresses the latest emerging contaminants and issues, as well as new international rules and regulations. The text details key environmental contaminants, explores their fates in the biosphere, and discusses bioaccumulation and the effects of contaminants at increasing levels of ecological organization. Vignettes written by experts will illustrate key themes or highlight especially pertinent examples. It offers an instructors' manual, PowerPoint slides, supplemental images, and a solutions manual.

CRC Press
Market: Environmental Science
December 2019: 254 x 178: 708pp
Hb: 978-0-815-35402-4: **£99.99**
eBook: 978-1-351-13399-9
Prev. Ed Hb: 978-1-466-58229-3
* For **full contents** and more information, visit: **www.routledge.com/9780815354024**

3rd Edition • TEXTBOOK • READER

Fundamentals of Satellite Remote Sensing

An Environmental Approach, Third Edition

Emilio Chuvieco, Universidad de Alcala, Alcala de Henares, Spain

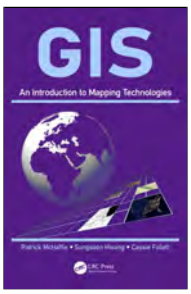
This third edition covers the most recent advances since the publication of the previous book, relating to the acquisition and interpretation of remotely-sensed data. It includes updated EO missions, such as third generations of geostationary meteorological satellites, the new polar orbiting platforms (Suomi), the ESA Sentinels program, and high-resolution commercial systems. Low-altitude sensing systems and improved coverage of digital techniques used to extract environmental information from remote sensing will be included as well; particularly, new machine learning classification techniques. Extended coverage of radar and LIDAR processing methods will also be included.

CRC Press
Market: Environmental Science
February 2020: 254 x 178: 432pp
Hb: 978-1-138-58383-2: **£99.99**
eBook: 978-0-429-50648-2
Prev. Ed Hb: 978-1-498-72805-8
* For **full contents** and more information, visit: **www.routledge.com/9781138583832**

TEXTBOOK • READER

GIS

An Introduction to Mapping Technologies



Patrick McHaffie, **Sungsoon Hwang**, DePaul University, Chicago and **Cassie Follett**, DePaul University, Chicago

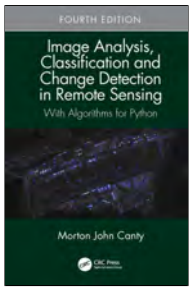
The purpose of this textbook is to provide an accessible introduction to geotechnology for a wide range of students. The techniques and approaches to problem solving, project organization and management, and data visualization are used with the intension of introducing students to the possibility of using *GIS* as a platform for making contributions to a wide range of programs that are concerned with social, economic, political, and environmental change. Includes activities that lead students through hands-on workflows to create flexible and functional "solutions" to specific tasks that are typical for geospatial analysts.

CRC Press
Market: Environmental Science
October 2018: 235 x 156: 362pp
Hb: 978-1-498-74023-4: **£79.99**
Pb: 978-0-367-57090-3: **£42.99**
eBook: 978-1-498-74024-1
* For **full contents** and more information, visit: **www.routledge.com/9781498740234**

4th Edition • TEXTBOOK • READER

Image Analysis, Classification and Change Detection in Remote Sensing

With Algorithms for Python, Fourth Edition



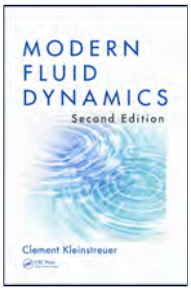
Morton John Canty, Juelich Research Center, Germany

This fourth edition is focused on the development and implementation of statistically motivated, data-driven techniques through a tight interweaving of statistical and machine learning theory with algorithms and computer codes. The material is self-contained and illustrated with many programming examples. New in the fourth edition is an in-depth treatment of a recent Wishart distribution-based sequential change detection algorithm for polarimetric SAR image time series, as well as an introduction to deep learning in the context of supervised land-use classification. It includes Python (open source) versions of all of the main image analysis algorithms making it accessible to all readers.

CRC Press
Market: Environmental Science
March 2019: 235 x 156: 530pp
Hb: 978-1-138-61322-5: **£115.00**
eBook: 978-0-429-46434-8
Prev. Ed Hb: 978-1-466-57037-5
* For **full contents** and more information, visit: **www.routledge.com/9781138613225**

2nd Edition • TEXTBOOK • READER

Modern Fluid Dynamics



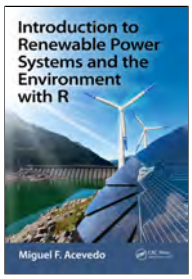
Clement Kleinstreuer

Modern Fluid Dynamics, Second Edition provides up-to-date coverage of intermediate and advanced fluids topics. The text emphasizes fundamentals and applications, supported by worked examples and case studies. Scale analysis, non-Newtonian fluid flow, surface coating, convection heat transfer, lubrication, fluid-particle dynamics, microfluidics, entropy generation, and fluid-structure interactions are among the topics covered. Part A presents fluids principles, and prepares readers for the applications of fluid dynamics covered in Part B, which includes computer simulations and project writing. A review of the engineering math needed for fluid dynamics is included in an appendix.

CRC Press
Market: Engineering - Mechanical
April 2018: 254 x 178: 459pp
Hb: 978-1-138-19810-4: **£140.00**
eBook: 978-1-315-22627-9
* For **full contents** and more information, visit: **www.routledge.com/9781138198104**

TEXTBOOK • READER

Introduction to Renewable Power Systems and the Environment with R



Miguel F. Acevedo, University of North Texas Department of Geography, Denton, TX

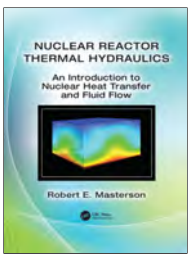
This textbook introduces the fundamentals of renewable electrical power systems examining their direct relationships with the environment. It covers conventional power systems and opportunities for increased efficiencies and friendlier environmental interactions. While presenting state-of-the-art technology, the author uses a practical interdisciplinary approach explaining electrical, thermodynamics, and environmental topics within every chapter. This approach allows students to feel comfortable moving across these disciplines. The added value are the examples of software programs using open source systems which serve as learning tools for the concepts and techniques described in the book.

CRC Press
Market: Energy & Clean Technology
July 2018: 254 x 178: 457pp
Hb: 978-1-138-19734-3: **£120.00**
Pb: 978-0-367-57130-6: **£42.99**
eBook: 978-1-315-27961-9
* For **full contents** and more information, visit: **www.routledge.com/9781138197343**

TEXTBOOK • READER

Nuclear Reactor Thermal Hydraulics

An Introduction to Nuclear Heat Transfer and Fluid Flow



Robert E. Masterson, Virginia Polytechnic and State University, Blacksburg, USA

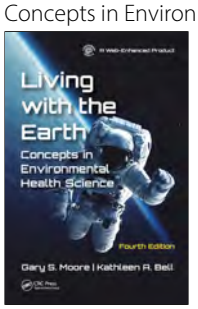
Nuclear Thermal-Hydraulic Systems provides a comprehensive approach to nuclear reactor thermal-hydraulics, reflecting the latest technologies, reactor designs, and safety considerations. The text makes extensive use of color images, internet links, computer graphics, and other innovative techniques to explore nuclear power plant design and operation. Key fluid mechanics, heat transfer, and nuclear engineering concepts are carefully explained, and supported with worked examples, tables, and graphics. Intended for use in one or two semester courses, the text is suitable for both undergraduate and graduate students. A complete Solutions Manual is available for professors.

CRC Press
Market: Engineering - Mechanical
September 2019: 254 x 203: 1388pp
Hb: 978-1-138-03537-9: **£180.00**
eBook: 978-1-315-22623-1
* For **full contents** and more information, visit: **www.routledge.com/9781138035379**

4th Edition • TEXTBOOK • READER

Living with the Earth, Fourth Edition

Concepts in Environmental Health Science



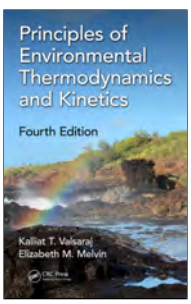
Gary S. Moore, Emeritus Prof. University of Massachusetts, MA, U.S.A. and **Kathleen A. Bell**

This fully-updated new edition incorporates both the common concepts associated with environmental health along with new, emerging, and controversial issues associated with environmental threats to human health. Emphasis is placed on biological, chemical, and physical sources of pollution, and the methods of controlling or limiting those exposures. Careful attention is paid to presenting a balanced view representing opposing scientific views on major issues ranging from "The Greenhouse Effect" to reproductive problems associated with endocrine disruptors. A companion website supplements the material with full-color figures, continuously updated breaking information, useful links, and more.

CRC Press
Market: Environmental Science
October 2018: 254 x 178: 608pp
Hb: 978-1-138-59056-4: **£94.99**
eBook: 978-0-429-03180-9
Prev. Ed Hb: 978-0-849-37998-7
* For **full contents** and more information, visit: **www.routledge.com/9781138590564**

4th Edition • TEXTBOOK • READER

Principles of Environmental Thermodynamics and Kinetics



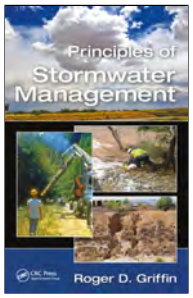
Kalliat T. Valsaraj, Louisiana State University, Baton Rouge, Louisiana, USA and **Elizabeth M. Melvin**

This book is about applications of chemical thermodynamics and kinetics to various environmental problems related to air, water, soil, and biota. The new edition contains substantial updates and a new table of contents. The applications are new and extended to include current events in environmentally-based challenges. Demonstrates the theoretical foundations of chemical property estimations for environmental process modeling. Provides a thorough understanding of applications and limitations of various property correlations. It adopts a multimedia approach to fate and transport modeling and pollution control design options. Includes numerous worked-out examples and hundreds of problems.

CRC Press
March 2018: 235 x 156: 496pp
Hb: 978-1-498-73363-2: **£120.00**
Pb: 978-0-367-57205-1: **£42.99**
eBook: 978-0-429-49183-2
Prev. Ed Hb: 978-1-420-07819-0
* For **full contents** and more information, visit: **www.routledge.com/9781498733632**

TEXTBOOK • READER

Principles of Stormwater Management



Roger D. Griffin, Griffin Environmental International, Irvine, California, USA

This book presents of all aspects of storm water management: the hydrologic cycle, sources of contaminants, standards applicable to discharges, regulatory issues, atmospheric deposition, best management practices, and health/environmental impacts. It includes technical details of the modern treatment of stormwater, the emerging issues of atmospheric deposition, run-on, and snow melt, the Epidemiologic Model, and field data on discharge concentrations of a variety of contaminants. The principles explained in this book will enable students, contractors, developers, and engineers to grasp the most important field elements which must be included for construction projects impacting stormwater.

CRC Press
Market: Water Science & Engineering
February 2018: 235 x 156: 350pp
Hb: 978-1-138-09362-1: **£110.00**
eBook: 978-1-351-11375-5
* For **full contents** and more information, visit: **www.routledge.com/9781138093621**

TEXTBOOK • READER

Sustainability and Design Ethics, Second Edition

Jean Russ, College of Southern Maryland

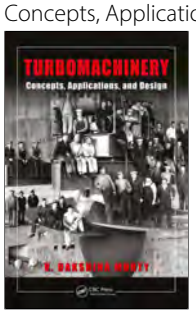
Since the first edition, there has been a significant shift across the economy in terms of recognizing the importance of sustainability. This shift is discussed in the second edition through a substantial revision of all the chapters and the addition of a new chapter on business principles, practices, and sustainability. This book unveils a broad understanding of the theories and practices of ethical reasoning- from the general introduction to the more sophisticated theories, followed by the practices of design professionals and organizations that embody these theories, and, the detailed measures and actions to achieve future sustainability.

CRC Press
Market: Environmental Science
November 2018: 235 x 156: 199pp
Hb: 978-1-138-39041-6: **£120.00**
Pb: 978-1-138-58368-9: **£64.99**
eBook: 978-0-429-50658-1
* For **full contents** and more information, visit: **www.routledge.com/9781138583689**

TEXTBOOK • READER

Turbomachinery

Concepts, Applications, and Design



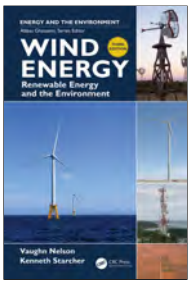
V. Dakshina Murty

Turbomachinery: Concepts, Applications, and Design is an introductory turbomachinery textbook aimed at seniors and first year graduate students, giving balanced treatment of both the concepts and design aspects of turbomachinery, based on sound analysis and a strong theoretical foundation. The text has three sections, Basic Concepts, Incompressible Fluid Machines; and Compressible Fluid Machines. Emphasis is on straightforward presentation of key concepts and applications, with numerous examples and problems that clearly link theory and practice over a wide range of engineering areas. Problem solutions and figure slides are available for instructors adopting the text for their classes.

CRC Press
Market: Engineering-Mechanical
January 2018: 254 x 178: 326pp
Hb: 978-1-138-64069-6: **£150.00**
eBook: 978-1-315-20512-0
* For **full contents** and more information, visit: **www.routledge.com/9781138640696**

3rd Edition • TEXTBOOK • READER

Wind Energy: Renewable Energy and the Environment



Vaughn Nelson, West Texas A&M University, Canyon, USA and **Kenneth Starcher**, West Texas A&M University, Canyon, USA

Series: Energy and the Environment

This book explores the wind industry from its inception in the 1970s to today; presents the design, aerodynamics, operation, control, applications, and different types of wind turbines; and provides ample reasons to shift from fossil fuels to renewable energy. It also discusses the political and economic factors regarding the adoption of wind as an energy source. It covers the characteristics of wind, such as shear, power potential, and turbulence, and discusses the measurement and siting of individual wind turbines and wind farms. This new edition is fully updated throughout, and adds new material on wind forecasting, offshore wind, decommissioning and repowering wind farms, and more.

CRC Press
Market: Energy & Clean Technology
November 2018: 254 x 178: 326pp
Hb: 978-1-138-61534-2: **£110.00**
eBook: 978-0-429-46315-0
Prev. Ed Hb: 978-1-466-58159-3
* For **full contents** and more information, visit: **www.routledge.com/9781138615342**

TEXTBOOK • READER

Engineering Economics of Life Cycle Cost Analysis

John Vail Farr and **Isaac Faber**

Engineering has changed dramatically in the last century. With modern computing systems, instantanious communcation, elimination of low/mid management, and extremely efficent supply chains has dramatically affected the responsibilities of engineers at all levels. The future will requires systems that are move complex. Employees at all levels need to be able to develop accurate cost estimates based upon defensible cost analysis. It is under this backdrop that this book is being written. By presenting the methods, processes, and tools needed to conduct cost analysis, estimation, and management of complex systems, this textbook is the next step beyond basic engineering economics.

CRC Press
Market: Engineering - Industrial & Manufacturing
November 2018: 235 x 156: 378pp
Hb: 978-1-138-60678-4: **£110.00**
eBook: 978-0-429-46630-4
* For **full contents** and more information, visit: **www.routledge.com/9781138606784**

2nd Edition • TEXTBOOK • READER

Project Management Tools and Techniques

A Practical Guide, Second Edition

Deborah Sater Carstens and **Gary L. Richardson**, University of Houston, Texas, USA

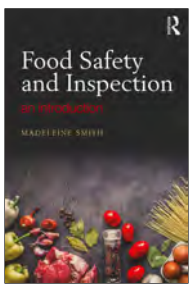
The topic of project management is truly an art seeking science involving the balancing of project objectives against restraints of time, budget, and quality. Achieving this balance requires skill, experience, and many tools, and techniques which are the focus of this textbook. This new edition provides updated content to incorporate examples from Microsoft Project 2016 and material from the Project Management Body of Knowledge Guide (PMBOK), sixth edition. It includes step-by-step instructions on how software tools can be used to assist project managers. The book incorporates lab assignments and cases for hands-on-experiences in using project management techniques and tools.

CRC Press
Market: Engineering - Industrial & Manufacturing
November 2019: 235 x 156: 468pp
Hb: 978-0-367-20137-1: **£120.00**
eBook: 978-0-429-26316-3
Prev. Ed Hb: 978-1-466-51562-8
* For **full contents** and more information, visit: **www.routledge.com/9780367201371**

TEXTBOOK • READER

Food Safety and Inspection

An Introduction



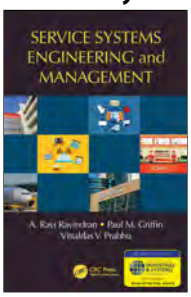
Madeleine Smith

Food Safety and Inspection: An Introduction focuses on food categories and describes common hazards associated with each, using published peer-reviewed research to explain and evaluate the health risk. It is a practical textbook designed to support the role of food inspection in a modern food industry. There are seven chapters looking at specific aspects of food safety, including a chapter on spoilage and another on fraud and adulteration.

Routledge
Market: Health & Safety
July 2018: 234x156: 108pp
Hb: 978-0-815-35353-9: **£115.00**
Pb: 978-0-815-35354-6: **£42.99**
eBook: 978-1-351-13610-5
* For **full contents** and more information, visit: **www.routledge.com/9780815353546**

TEXTBOOK • READER

Service Systems Engineering and Management



A. Ravi Ravindran, **Paul M. Griffin** and **Vittaldas V. Prabhu**

Series: Operations Research Series

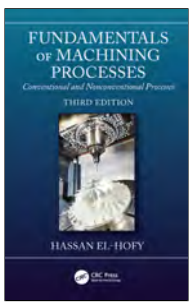
This new textbook will provide state-of-the-art models, concepts and solution methods important in the design, control, operation, and management of service systems. It will cover supply chain management, warehouse & distribution, financial engineering, revenue management in airlines, retail engineering, health systems, and financial services, etc... The textbook is for the engineering market, emphasizing the application of operations research models to optimally design and manage service systems. Currently, no such textbook exists in the market.

CRC Press
Market: Engineering - Industrial & Manufacturing
April 2018: 235 x 156: 618pp
Hb: 978-1-498-72306-0: **£110.00**
eBook: 978-1-498-72307-7
* For **full contents** and more information, visit: **www.routledge.com/9781498723060**

3rd Edition • TEXTBOOK • READER

Fundamentals of Machining Processes

Conventional and Nonconventional Processes, Third Edition



Hassan El-Hofy, Egypt-Japan University of Science and Technology

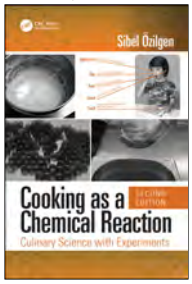
Written by an expert with over 40 years of experience in research and teaching machining and related topics, this new edition textbook presents the principles and theories of material removal and applications for conventional and nonconventional machining processes. The new edition is ideal for undergraduate students in production, materials, industrial, mechatronics, marine, mechanical, and manufacturing engineering programs, and also useful for graduate programs related to higher-level machining topics, as well as professional engineers and technicians. All chapters will be updated, with 4 new chapters added.

CRC Press
Market: Engineering - Industrial & Manufacturing
November 2018: 235 x 156: 602pp
Hb: 978-1-138-33490-8: **£150.00**
eBook: 978-0-429-44332-9
Prev. Ed Hb: 978-1-466-57702-2
* For **full contents** and more information, visit: **www.routledge.com/9781138334908**

2nd Edition • TEXTBOOK • READER

Cooking as a Chemical Reaction

Culinary Science with Experiments



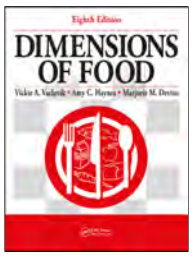
Z. Sibel Ozilgen, Yeditepe University, Istanbul, Turkey

Written at the undergraduate level, Cooking as a Chemical Reaction: Culinary Science with Experiments, Second Edition provides experiments for students in culinary arts, nutrition, dietetics, food science and technology, and gastronomy programs. The text uses experiments and experiences from the kitchen, and other food preparation areas, rather than theory, as the basic means of explaining the scientific facts and principles behind food preparation and processing. Using the book, students first perform certain experiments and record their observations in tables provided in the book. The second edition features new chapters on food ygiene and safety, kitchen terminology, and taste pairing.

CRC Press
Market: Life Sciences
June 2019: 254 x 178: 410pp
Hb: 978-1-138-59712-9: **£74.99**
eBook: 978-0-429-48708-8
Prev. Ed Hb: 978-1-138-42646-7
* For **full contents** and more information, visit: **www.routledge.com/9781138597129**

8th Edition • TEXTBOOK

Dimensions of Food



Vickie A. Vaclavik and **Amy Haynes**, Medical City Hospital, Dallas, Texas, USA

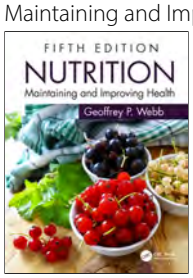
Following the tradition of its predecessor, this eighth edition allows students to explore various aspects of food. It presents various dimensions including the chemical, economic, nutritional, palatability, processing, and sanitation aspects of food. The text provides a basic understanding of functional and structural properties of several food groups such as dairy, fruits, vegetables, eggs, meat, poultry, and fish. Unique to this manual are extensive appendices which supplement current textbooks and provide additional background for lab exercises.

CRC Press
Market: Nutrition
February 2018: 279 x 216: 362pp
Hb: 978-1-138-37365-5: **£160.00**
Pb: 978-1-138-63126-7: **£84.99**
eBook: 978-1-315-20898-5
Prev. Ed Pb: 978-1-439-82167-1
* For **full contents** and more information, visit: **www.routledge.com/9781138631267**

5th Edition • TEXTBOOK • READER

Nutrition

Maintaining and Improving Health



Geoffrey P. Webb, University of East London, UK

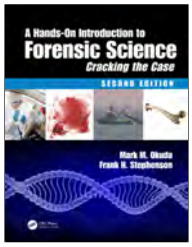
This book contains in-depth and critical reviews of the methods used to evaluate nutritional intakes/status and the observational and experimental used to investigate putative links between dietary factors and health outcome. It covers the role of food as a source of energy and nutrients while discussing the non-nutritional roles of food and the social and psychological factors that influence food choice. Presenting a critical discussion on the value of nutrition research linking specific foods or nutrients to specific diseases encourages students to question the value of some current nutrition research.

CRC Press
Market: Nutrition
November 2019: 246x189: 676pp
Hb: 978-0-367-36939-2: **£140.00**
Pb: 978-0-815-36241-8: **£54.99**
eBook: 978-1-351-05807-0
Prev. Ed Pb: 978-1-444-14246-4
* For **full contents** and more information, visit: **www.routledge.com/9780815362418**

2nd Edition • TEXTBOOK

A Hands-On Introduction to Forensic Science

Cracking the Case, Second Edition



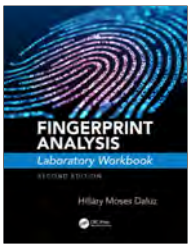
Mark M. Okuda, Evergreen Valley College, San Jose, California, USA and **Frank H. Stephenson, PhD.**, Thermo Fisher Scientific, Carlsbad, California, USA

A Hands-On Introduction to Forensic Science, Second Edition continues in the tradition of the first edition taking a wholly unique approach to teaching forensic science. Each chapter begins with a brief, fictional narrative that runs through the entire book; it is a crime fiction narrative that describes the interaction of a veteran homicide detective teamed with a criminalist and the journey they take together to solve a missing persons case. Step-by-step the book progressive reveals pieces of information about the crime, followed by the more traditional presentation of scientific principles and concepts on a given forensic topics.

CRC Press
Market: Forensics & Criminal Justice
October 2019: 279 x 216: 527pp
Hb: 978-1-138-49566-1: **£89.99**
eBook: 978-1-351-02382-5
Prev. Ed Hb: 978-1-482-23490-9
* For **full contents** and more information, visit: **www.routledge.com/9781138495661**

2nd Edition • TEXTBOOK • READER

Fingerprint Analysis Laboratory Workbook, Second Edition



Hillary Moses Daluz

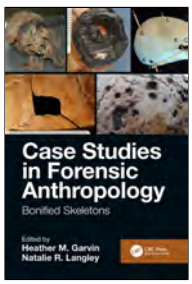
The exercises in Fingerprint Analysis Laboratory Workbook, Second Edition address all aspects of fingerprint theory, investigation, processing, comparisons, and research. Designed specifically to parallel the *Fundamentals of Fingerprint Analysis, Second Edition* textbook, the laboratory exercises correspond with the textbook chapters, with exercise in the lab chapter putting into practice the concepts covered in the text chapter. Each lab follows the same format, beginning with the objectives of the experiment and providing the background information necessary to perform the experiment.

CRC Press
Market: Forensics & Criminal Justice
November 2018: 279 x 216: 134pp
Hb: 978-1-138-48804-5: **£160.00**
Pb: 978-1-138-48805-2: **£32.99**
eBook: 978-1-351-04218-5
Prev. Ed Pb: 978-1-466-59789-1
* For **full contents** and more information, visit: **www.routledge.com/9781138488052**

TEXTBOOK • READER

Case Studies in Forensic Anthropology

Bonified Skeletons



Edited by **Heather M. Garvin**, Des Moines University, USA and **Natalie R. Langley**, Mayo Clinic, USA

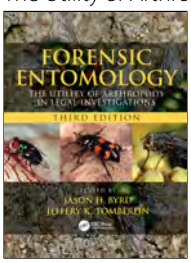
Case Studies in Forensic Anthropology prepares both aspiring forensic anthropologists and informs current practitioners. The cases are interesting and unique, detailing how specific challenges contribute to the body of forensic anthropological knowledge and practice.

CRC Press
Market: Forensic Science
November 2019: 254 x 178: 334pp
Hb: 978-1-138-34765-6: **£89.99**
eBook: 978-0-429-43698-7
* For **full contents** and more information, visit: **www.routledge.com/9781138347656**

3rd Edition • TEXTBOOK

Forensic Entomology

The Utility of Arthropods in Legal Investigations, Third Edition



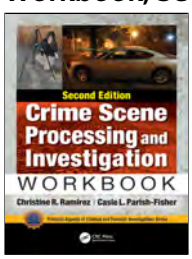
Edited by **Jason H. Byrd**, University of Florida, Gainesville, USA and **Jeffery K. Tomberlin**, Texas A&M University, College Station, USA

Forensic Entomology: The Utility of Arthropods in Legal Investigations, Third Edition continues in the tradition of the two best-selling prior editions, maintaining its status as the single-most comprehensive book on forensic entomology practice currently available. The new edition includes current, in-the-field best practices contributed by top professionals who have advanced the discipline through ground-breaking research and fieldwork over the last several decades. Chapters examine the biological foundations of insect biology and scientific underpinnings of forensic entomology, principles that govern utilizing insects in legal and criminal investigations.

CRC Press
Market: Biology/Entomology
January 2020: 279 x 216: 620pp
Hb: 978-0-815-35016-3: **£120.00**
Pb: 978-0-815-35020-0: **£74.99**
eBook: 978-1-351-16376-7
* For **full contents** and more information, visit: **www.routledge.com/9780815350200**

2nd Edition • TEXTBOOK • READER

Crime Scene Processing and Investigation Workbook, Second Edition



Christine R. Ramirez, Texas Forensic Science Academy, College Station, USA and **Casie L. Parish-Fisher**, St. Edwards University, Austin, Texas, USA

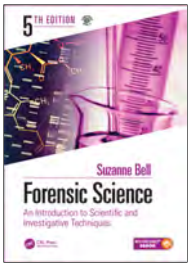
Crime Scene Processing and Investigation Workbook, Second Edition is the only workbook which directly supports and cross-references methodology and terminology presented in Ross Gardner's best-selling Practical Crime Scene Processing and Investigations. The workbook conducts over 30 activities with detailed instructions, concept overviews, and reflective post lab questions. Fully updated, the book continues to serve as supporting material offering hands-on activities to supplement theories and methodologies to support the new material presented in the Third Edition of the textbook.

CRC Press
Market: Criminal Justice/Forensic Science
September 2019: 279 x 216: 326pp
Hb: 978-1-138-49138-0: **£94.99**
Pb: 978-1-138-49148-9: **£32.99**
eBook: 978-1-351-03278-0
Prev. Ed Pb: 978-1-439-84970-5
* For **full contents** and more information, visit: **www.routledge.com/9781138491489**

5th Edition • TEXTBOOK

Forensic Science

An Introduction to Scientific and Investigative Techniques, Fifth Edition



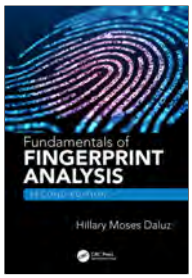
Suzanne Bell, West Virginia University, Morgantown, USA

Covering a range of fundamental topics essential to modern forensic investigation, the fifth edition of the landmark text Forensic Science: An Introduction to Scientific and Investigative Techniques presents contributions and case studies from the personal files of experts in the field. Designed for a single-term course at the undergraduate level, the book goes beyond theory to application, incorporating the wisdom of forensic practitioners who discuss the real cases they have investigated. A brand-new feature, Myths in Forensic Science, highlights the differences between true forensics and popular media fictions.

CRC Press
Market: Forensics & Criminal Justice
March 2019: 279 x 216: 366pp
Hb: 978-1-138-04812-6: **£89.99**
eBook: 978-1-315-17033-6
Prev. Ed Hb: 978-1-439-85383-2
* For **full contents** and more information, visit: **www.routledge.com/9781138048126**

2nd Edition • TEXTBOOK • READER

Fundamentals of Fingerprint Analysis, Second Edition



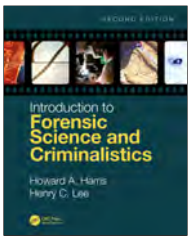
Hillary Moses Daluz

Fundamentals of Fingerprint Analysis, Second Edition provides an understanding of the historical background of fingerprint evidence, and follows it all the way through to illustrate how it is utilized in the courtroom. New coverage to this edition includes such topics as the biometrics and AFIS systems, physiology and embryology of fingerprint development in the womb, digital fingerprint record systems, new and emerging chemical reagents, varieties of fingerprint powders, and more. Fundamentals of Fingerprint Analysis, Second Edition stands as the most comprehensive introductory textbook on the market.

CRC Press
Market: Forensics & Criminal Justice
November 2018: 254 x 178: 391pp
Hb: 978-1-138-48745-1: **£120.00**
eBook: 978-1-351-04320-5
Prev. Ed Hb: 978-1-466-59797-6
* For **full contents** and more information, visit: **www.routledge.com/9781138487451**

2nd Edition • TEXTBOOK

Introduction to Forensic Science and Criminalistics, Second Edition



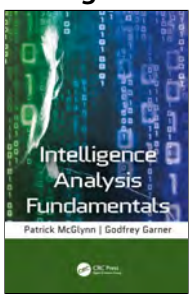
Howard A. Harris, University of New Haven, West Haven, Connecticut, USA and **Henry C. Lee**, University of New Haven, Henry C. Lee Institute of Forensic Science, West Haven, Connecticut, USA

This Second Edition of *Introduction to Forensic Science and Criminalistics* presents the practice of forensic science from a broad viewpoint. The Second Edition is fully updated to cover the latest scientific methods of evidence collection, evidence analytic techniques, and the application of the analysis results to an investigation and use in court. This includes coverage of physical evidence, evidence collection, crime scene processing, pattern evidence, fingerprint evidence, questioned documents, DNA and biological evidence, drug evidence, toolmarks and fireams, arson and explosives, chemical testing, and a new chapter of computer and digital forensic evidence.

CRC Press
Market: Forensics & Criminal Justice
February 2019: 254 x 203: 446pp
Hb: 978-1-498-75796-6: **£89.99**
eBook: 978-1-315-11917-5
* For **full contents** and more information, visit: **www.routledge.com/9781498757966**

TEXTBOOK • READER

Intelligence Analysis Fundamentals



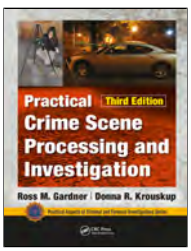
Godfrey Garner and **Patrick McGlynn**

Intelligence Analysis Fundamentals provides an introductory study of intelligence gathering and analysis, serving as an accessible text for college level undergraduate and graduate level courses. The textbookencapsulates and simplifies the intelligence cycle providing an elementary explanation of the process of gathering, analyzing and appropriate distribution of intelligence, using practical examples and scenarios drawn from criminal, military, and terror-based circumstances. Coverage is general enough in nature that a lay student—interested in pursing a career in intelligence, Homeland Security, or other related areas of law enforcement—will benefit from it.

CRC Press
Market: National Security
August 2018: 235 x 156: 333pp
Hb: 978-0-815-36940-0: **£120.00**
eBook: 978-1-351-24935-5
* For **full contents** and more information, visit: **www.routledge.com/9780815369400**

3rd Edition • TEXTBOOK • READER

Practical Crime Scene Processing and Investigation, Third Edition



Ross M. Gardner, former felony criminal investigator at the U.S. Army Criminal Investigation Command, Georgia, USA and **Donna Krouskup**

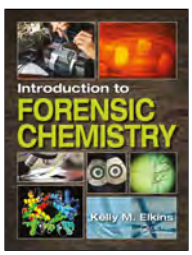
Series: Practical Aspects of Criminal and Forensic Investigations

Practical Crime Scene Processing and Investigation, Third Edition is a basic technical reference for those learning or engaged in crime scene investigation. It remains a standard reference due to the "practical" nature of the book. It describes in depth procedures, explaining not just why such activity is required, but a practical how—to approach for accomplishing those activities. These procedures are validated through field trial and are adjusted to the changing legal and scientific environment that crime scene investigators encounter.

CRC Press
Market: Forensic and Police Science
November 2018: 254 x 203: 429pp
Hb: 978-1-138-04778-5: **£89.99**
eBook: 978-1-315-17059-6
Prev. Ed Hb: 978-1-439-85302-3
* For **full contents** and more information, visit: **www.routledge.com/9781138047785**

TEXTBOOK • READER

Introduction to Forensic Chemistry



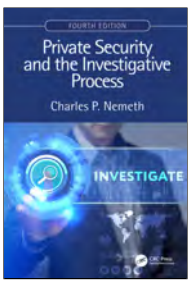
Kelly M. Elkins, Towson University, Chemistry Department, Maryland, USA

Introduction to Forensic Chemistry is the perfect balance of testing methods and application. Coverage is neither too simplistic, nor overly advanced, making the book ideal for use in both undergraduate and graduate courses. It introduces chemical tests, spectroscopy, advanced spectroscopy, and chromatography to students. The second half addresses applications and methods to analyze and interpret controlled substances, trace evidence, questioned documents, firearms, explosives, environmental contaminants, toxins, and other topics. The book looks at innovations in the field over time including the latest development of new discernible chemical reactions, instrumental tools, methods, and more.

CRC Press
Market: Chemistry/Forensic Science
October 2018: 254 x 203: 354pp
Hb: 978-1-498-76310-3: **£89.99**
eBook: 978-0-429-45453-0
* For **full contents** and more information, visit: **www.routledge.com/9781498763103**

4th Edition • TEXTBOOK • READER

Private Security and the Investigative Process, Fourth Edition



Charles P. Nemeth

Private Security and the Investigative Process, Fourth Edition is fully updated to provide complete coverage of the investigative process for private investigators and thos in corporate security environments. This edition covers emerging technology, updated legal considerations, and new information in case evaluation. The book is a useful reference for both students and professionals as to investigative practice most relevant to the private security industry—laying out not only the essentials of conducting investigations, but also providng and overview of the private security industry overall.

CRC Press
Market: Criminal Justice/Investigations
September 2019: 254 x 178: 434pp
Hb: 978-1-138-48964-6: **£120.00**
eBook: 978-1-351-03726-6
Prev. Ed Hb: 978-1-420-08569-3
* For **full contents** and more information, visit: **www.routledge.com/9781138489646**

3rd Edition • TEXTBOOK • READER

Scientific Protocols for Fire Investigation, Third Edition

John J. Lentini, Scientific Fire Analysis, LLC, Big Pine Key, Florida, USA

Series: Protocols in Forensic Science

Scientific Protocols for Fire Investigation, Third Edition focuses on the practical application of fundamental scientific principles to determine the causes of fires. Since the publication of the first edition 2006, the book has been updated extensively to reflect the rapidly evolving best-practices in the field—driven by new discoveries about fire behavior. Fire investigators, insurance adjusters, lawyers, forensic chemists, and fire/life safety professionals will find this a timely and invaluable resource.

CRC Press
Market: Fire Science/Forensics
October 2018: 254 x 203: 608pp
Hb: 978-1-138-03701-4: **£180.00**
Pb: 978-1-138-03702-1: **£74.99**
eBook: 978-1-315-17809-7
* For **full contents** and more information, visit: **www.routledge.com/9781138037021**

3rd Edition • TEXTBOOK • READER

Scientific Protocols for Fire Investigation, Third Edition

John J. Lentini, Scientific Fire Analysis, LLC, Big Pine Key, Florida, USA

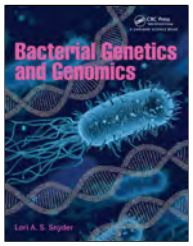
Series: Protocols in Forensic Science

Scientific Protocols for Fire Investigation, Third Edition focuses on the practical application of fundamental scientific principles to determine the causes of fires. Since the publication of the first edition 2006, the book has been updated extensively to reflect the rapidly evolving best-practices in the field—driven by new discoveries about fire behavior. Fire investigators, insurance adjusters, lawyers, forensic chemists, and fire/life safety professionals will find this a timely and invaluable resource.

CRC Press
Market: Fire Science/Forensics
October 2018: 254 x 203: 608pp
Hb: 978-1-138-03701-4: **£180.00**
Pb: 978-1-138-03702-1: **£74.99**
eBook: 978-1-315-17809-7
Prev. Ed Hb: 978-1-439-87598-8
* For **full contents** and more information, visit: **www.routledge.com/9781138037014**

TEXTBOOK

Bacterial Genetics and Genomics



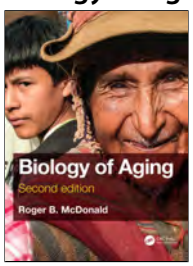
Lori A.S. Snyder

Our understanding of bacterial genetics has progressed as the genomics field has advanced. Genetics and genomics complement and influence each other; they are inseparable. Under the novel insights from genetics and genomics, once-believed borders in biology start to fade: biological knowledge of the bacterial world is being viewed under a new light and concepts are being redefined. This text assumes readers have some knowledge of genetics and microbiology but acknowledges that it can be varied. Therefore, the book includes all of the information that readers need to know in order to understand the more advanced material in the book.

Garland Science
Market: Genetics
March 2020: 279 x 216: 413pp
Hb: 978-0-367-26376-8: **£150.00**
Pb: 978-0-815-34569-5: **£59.99**
eBook: 978-0-429-29301-6
* For **full contents** and more information, visit: **www.routledge.com/9780815345695**

2nd Edition • TEXTBOOK

Biology of Aging



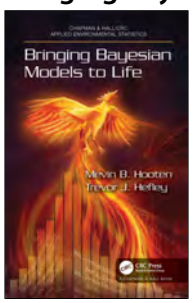
Roger B. McDonald, University of California at Davis, USA

Biology of Aging, Second Edition revises and updated the original text to reflect the new approach to aging research that has had a significant impact on how disciplines such as gerontology and geriatrics view the aging process. The rate of aging and the incidence of disease are now considered highly modifiable, especially as biogerontologists and geriatricians are now accepting that time-related functional loss and disease are more closely related to environmental factors than to an intrinsic process. This book discusses the science behind the discovery that the rate of aging can be slowed and that many diseases can be prevented.

Garland Science
Market: Developmental Biology
June 2019: 279 x 216: 456pp
Hb: 978-0-367-14160-8: **£140.00**
Pb: 978-0-815-34567-1: **£52.99**
eBook: 978-0-429-03064-2
Prev. Ed Pb: 978-0-815-34213-7
* For **full contents** and more information, visit: **www.routledge.com/9780815345671**

TEXTBOOK • READER

Bringing Bayesian Models to Life



Mevin B. Hooten, U.S. Geological Survey, Colorado Cooperative Fish and Wildlife Research Unit, Department of Fish, Wildlife, and Conservation Biology, Department of Statistics, Colorado State University, USA and **Trevor J. Hefley**

Series: Chapman & Hall/CRC Applied Environmental Statistics

Bringing Bayesian Models to Life contains a comprehensive treatment of models and associated algorithms for fitting the models to data. We provide detailed and annotated R code in each chapter and apply it to fit each model we present to either real or simulated data for instructional purposes. Our code shows how to create every result and figure in the book so that readers can use and modify it for their own analyses. We provide all code and data in an organized set of directories available at the authors' websites.

CRC Press
Market: Agricultural Science
June 2019: 235 x 156: 574pp
Hb: 978-0-367-19848-0: **£59.99**
eBook: 978-0-429-24365-3
* For **full contents** and more information, visit: **www.routledge.com/9780367198480**

TEXTBOOK • READER

DNA Repair and Replication

Mechanisms and Clinical Significance

Edited by **Roger J. A. Grand**, University of Birmingham, UK and **John J. Reynolds**, Institute of Cancer and Genomic Sciences, College of Medical and Dental Sciences, University of Birmingham, Edgbaston, Birmingham, UK

DNA Repair and Replication brings together contributions from active researchers. The first part of this book covers most aspects of the DNA damage response, emphasizing the relationship to replication stress. The second part concentrates on the relevance of this to human disease, with particular focus on both the causes and treatments which make use of DNA Damage Repair (DDR) pathways.

Garland Science
Market: Molecular genetics
September 2018: 279 x 216: 364pp
Hb: 978-1-138-61291-4: **£105.00**
Pb: 978-0-815-34599-2: **£69.99**
eBook: 978-0-429-46474-4
* For **full contents** and more information, visit: **www.routledge.com/9780815345992**

TEXTBOOK • READER

Insects and Society

Timothy D. Schowalter

The first textbook to cater directly to those studying Insect and Society modules, this book will also be fascinating reading for anyone interested in learning how insects affect human affairs and in applying more sustainable approaches to "managing" insects. This includes K-12 teachers, undergraduate students, amateur entomologists, conservation practitioners, environmentalists, as well as natural resource managers, land use planners and environmental policy makers.

CRC Press
Market: Life Science
December 2019: 246x189: 320pp
Hb: 978-0-367-41978-3: **£89.99**
Pb: 978-0-367-34780-2: **£44.99**
eBook: 978-0-429-32792-6
* For **full contents** and more information, visit: **www.routledge.com/9780367347802**

3rd Edition • TEXTBOOK

Marine Microbiology

Ecology & Applications

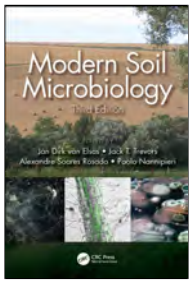
Colin B. Munn

The third edition of this bestselling text has been rigorously updated to reflect major new discoveries and concepts since 2011, especially progress due to extensive application of high-throughput sequencing, single cell genomics and analysis of large datasets. Significant advances in understanding the diversity and evolution of bacteria, archaea, fungi, protists, and viruses are discussed and their importance in marine processes is explored in detail. A Companion Website provides extra resources to aid teaching and learning.

CRC Press
Market: Life Science
January 2020: 279 x 216: 436pp
Hb: 978-0-367-18359-2: **£120.00**
Pb: 978-0-367-18356-1: **£59.99**
eBook: 978-0-429-06104-2
Prev. Ed Pb: 978-0-815-36517-4
* For **full contents** and more information, visit: **www.routledge.com/9780367183561**

3rd Edition • TEXTBOOK

Modern Soil Microbiology, Third Edition



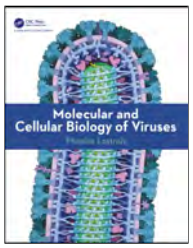
Edited by **Jan Dirk van Elsas**, Groningen University, The Netherlands, **Jack T. Trevors**, University of Guelph, Ontario, Canada, **Alexandre Soares Rosado**, Federal University of Rio de Janeiro, Brazil and **Paolo Nannipieri**

Following the tradition of its predecessors, *Modern Soil Microbiology, Third Edition* , is an indispensable source that supports graduate/undergraduate teaching for soil and environmental microbiologists in academia, as well as in government and industrial laboratories.

CRC Press
Market: Agricultural Science
April 2019: 254 x 178: 500pp
Hb: 978-1-498-76353-0: **£59.99**
eBook: 978-0-429-05918-6
Prev. Ed Hb: 978-0-824-72749-9
* For **full contents** and more information, visit: **www.routledge.com/9781498763530**

TEXTBOOK

Molecular and Cellular Biology of Viruses



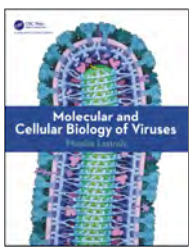
Phoebe Lostroh, Colorado College, USA

Molecular and Cellular Biology of Viruses leads students on an exploration of viruses by supporting interactive learning. All major classes of viruses are covered, with separate chapters for their replication and expression strategies. Specific cases drawn from primary literature foster engagement. The text offers a readable but rigorous coverage of the molecular and cellular biology of viruses, making it suitable for junior and senior undergraduates to read before class.

Garland Science
Market: Microbiology
July 2019: 279 x 216: 523pp
Hb: 978-0-367-07632-0: **£120.00**
Pb: 978-0-815-34523-7: **£59.99**
eBook: 978-0-429-02172-5
* For **full contents** and more information, visit: **www.routledge.com/9780815345237**

TEXTBOOK

Molecular and Cellular Biology of Viruses



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eBook: 978-0-429-02172-5
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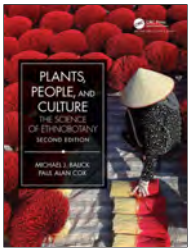
2nd Edition • TEXTBOOK • READER

Plants, People, and Culture

The Science of Ethnobotany



Michael J Balick and **Paul Alan Cox**, Brain Chemistry Labs Jackson, WY 83001-3464

Botanical wisdom of indigenous peoples has led to discoveries of new pharmaceuticals, chemical compounds, and a myriad of other products. Using riveting stories of fieldwork in remote villages, two of the world's leading ethnobotanists argue that the very roots of human culture are deeply intertwined with plants.

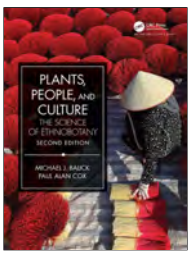
Designed for the college classroom as well as for the general lay reader, *Plants, People, and Culture, Second Edition,* entices the reader with first-hand stories of fieldwork, spectacular illustrations, and a deep respect for both indigenous peoples and the earth's natural heritage.

Garland Science
Market: Biology
September 2020: 279 x 216: 228pp
Hb: 978-0-367-50183-9: **£99.99**
Pb: 978-0-815-34590-9: **£39.99**
eBook: 978-1-003-04907-4
* For **full contents** and more information, visit: **www.routledge.com/9780815345909**

2nd Edition • TEXTBOOK • READER

Plants, People, and Culture

The Science of Ethnobotany



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Garland Science
Market: Biology
September 2020: 279 x 216: 228pp
Hb: 978-0-367-50183-9: **£99.99**
Pb: 978-0-815-34590-9: **£39.99**
eBook: 978-1-003-04907-4
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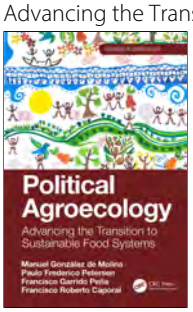
TEXTBOOK • READER

Political Agroecology

Advancing the Transition to Sustainable Food Systems



Manuel González de Molina, Universidad Pablo de Olavide, Seville, Spain, **Paulo Frederico Petersen**, AS-PTA - Agricultura Familiar e Agroecologia, Rio de Janeiro, Brazil, **Francisco Garrido Peña**, Universidad de Jaen, Jaen, Spain and **Francisco Roberto Caporal**, Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brazil

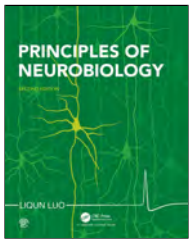
Series: Advances in Agroecology

Political Agroecology is the first book to offer a systematic and articulated reflection on Political Agroecology from the Agroecological perspective. It defines the disciplinary field responsible for designing and producing actions, institutions and regulations aimed at achieving agrarian sustainability. In short, it aims to build a political theory that makes the scaling-up of agroecological experiences possible, turning them into the foundation of a new and alternative food regime.

CRC Press
Market: Agricultural Science
September 2019: 235 x 156: 217pp
Hb: 978-1-138-36923-8: **£115.00**
Pb: 978-1-138-36922-1: **£42.99**
eBook: 978-0-429-42882-1
* For **full contents** and more information, visit: **www.routledge.com/9781138369221**

2nd Edition • TEXTBOOK • NEW EDITION

Principles of Neurobiology



Liqun Luo, Professor of Biology and Professor of Neurobiology, Department of Biology, at Stanford University

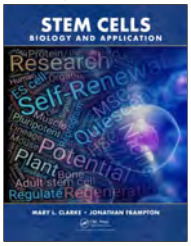
Principles of Neurobiology, Second Edition presents the major concepts of neuroscience with an emphasis on how we know what we know. The text is organized around a series of key experiments to illustrate how scientific progress is made and helps upper-level undergraduate and graduate students discover the relevant primary literature. Written by a single author in a clear and consistent writing style, each topic builds in complexity from electrophysiology to molecular genetics to systems level in a highly integrative approach. *Principles of Neurobiology* is accompanied by online resources including animations, figures in PowerPoint, and a Question Bank for adopting instructors.

Garland Science
Market: Neuroscience
September 2020: 279 x 216: 760pp
Hb: 978-0-367-51471-6: **£150.00**
Pb: 978-0-815-34605-0: **£59.99**
eBook: 978-1-003-05397-2
* For **full contents** and more information, visit: **www.routledge.com/9780815346050**

TEXTBOOK

Stem Cells

Biology and Application



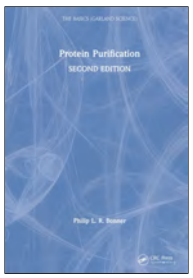
Mary Clarke and **Jonathan Frampton**

Stem cell science, encompassing basic biology to practical application, is both vast and diverse. *Stem Cells: Biology and Application* presents the basic concepts underlying the fast-moving science of stem cell biology. This textbook is written for an advanced stem cell biology course. The target audience includes senior undergraduates, first year graduate students, and practitioners in molecular biology, biology, and biomedical engineering. *Stem Cells* provides a comprehensive understanding of these unique cells, highlighting key areas of research, associated controversies, case studies, technologies, and pioneers in the field.

Garland Science
July 2020: 279 x 216: 462pp
Hb: 978-0-367-48172-8: **£120.00**
Pb: 978-0-815-34511-4: **£59.99**
eBook: 978-1-003-03840-5
* For **full contents** and more information, visit: **www.routledge.com/9780815345114**

2nd Edition • TEXTBOOK • READER

Protein Purification



Philip Bonner, Nottingham Trent University, UK

Series: THE BASICS (Garland Science)

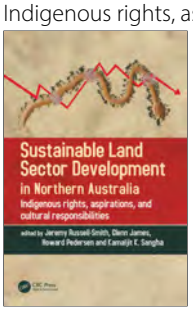
This second edition of *Protein Purification* provides a guide to the major chromatographic techniques, including non-affinity absorption techniques, affinity procedures, non-absorption techniques and methods for monitoring protein purity. The new edition of the book has been organized to encourage incremental learning about the topic, starting with the properties of water, progressing through the characteristics of amino acids and proteins which relate to the purification process. There is an overview of protein strategy and equipment, followed by discussions and examples of each technique and their applications.

Taylor & Francis
Market: Biochemistry, Molecular Biology & Cell Biology
August 2018: 254 x 178: 287pp
Hb: 978-1-138-31247-0: **£120.00**
Pb: 978-0-815-34488-9: **£59.99**
eBook: 978-0-429-45818-7
Prev. Ed Pb: 978-0-415-38511-4
* For **full contents** and more information, visit: **www.routledge.com/9780815344889**

TEXTBOOK • READER

Sustainable Land Sector Development in Northern Australia

Indigenous rights, aspirations, and cultural responsibilities



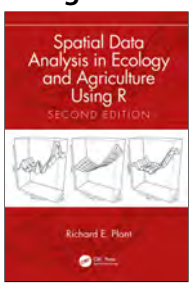
Edited by **Jeremy Russell-Smith**, Darwin Centre for Bushfire Research, Charles Darwin University, Darwin, Northern Territory, Australia, **Glenn James**, North Australian Indigenous Land and Sea Management Alliance Ltd., Brinkin, Northern Territory, Australia, **Howard Pedersen** and **Kamaljit K. Sangha**, Darwin Centre for Bushfire Research, Charles Darwin University, Darwin, Northern Territory, Australia

This book sets out a vision for developing North Australia based on a culturally appropriate and ecologically sustainable land sector economy. This vision supports both Indigenous responsibilities and community aspirations, as well as enhancing enterprise opportunities for society as a whole. In the past, well-meaning if often misguided policy agendas have failed - and continue to fail - Indigenous people living in remoter regions. This book will help breach that gap by acknowledging and harnessing Indigenous cultural strengths and knowledge systems for looking after the country and its people as part of a smart, novel and diversified ecosystem services economy.

CRC Press
Market: Environmental Science
August 2018: 254 x 178: 244pp
Hb: 978-1-138-60020-1: **£150.00**
Pb: 978-0-367-57119-1: **£42.99**
eBook: 978-0-429-47105-6
* For **full contents** and more information, visit: **www.routledge.com/9781138600201**

2nd Edition • TEXTBOOK • READER

Spatial Data Analysis in Ecology and Agriculture Using R



Richard E. Plant, University of California, Davis, USA

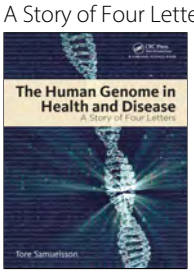
This book provides practical instruction on the use of the R programming language to analyze spatial data arising from research in ecology, agriculture, and environmental science. Readers have praised the book's practical coverage of spatial statistics, real-world examples, and user-friendly approach in presenting and explaining R code, aspects maintained in this update. Using data sets from cultivated and uncultivated ecosystems, the book guides the reader through the analysis of each data set, including setting research objectives, designing the sampling plan, data quality control, exploratory and confirmatory data analysis, and drawing scientific conclusions.

CRC Press
Market: Environmental Science
December 2018: 254 x 178: 684pp
Hb: 978-0-815-39275-0: **£94.99**
Pb: 978-0-367-73232-5: **£42.99**
eBook: 978-1-351-18991-0
Prev. Ed Hb: 978-1-439-81913-5
* For **full contents** and more information, visit: **www.routledge.com/9780815392750**

TEXTBOOK

The Human Genome in Health and Disease

A Story of Four Letters



Tore Samuelsson, University of Gothenburg, Sweden

The Human Genome in Health and Disease examines the human genome, a linear sequence of roughly 3 billion bases. The intimate link between this information and biological function is systematically explored and is illustrated with inherited disorders and cancer. A range of sequence-based functional units of the human genome are thereby covered.

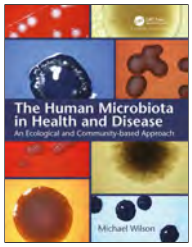
The book is motivated by the wealth of human sequence data currently accumulating and aids in understanding this information. It also discusses significant medical applications of human genome sequencing and genetic variation, such as the identification of causative variants in rare genetic disorders and a variety of current methods in gene therapy.

Garland Science
Market: Molecular Biology
February 2019: 297pp
Hb: 978-0-367-07633-7: **£120.00**
Pb: 978-0-815-34591-6: **£42.99**
eBook: 978-0-429-02173-2
* For **full contents** and more information, visit: **www.routledge.com/9780815345916**

TEXTBOOK • READER

The Human Microbiota in Health and Disease

An Ecological and Community-based Approach



Michael Wilson, UCL Eastman Dental Institute, UK

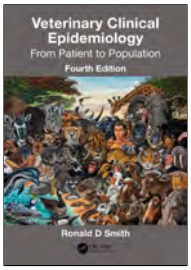
This book describes the various microbial communities (microbiota) inhabiting humans as well as their important roles in human health and disease. It is aimed at senior undergraduates and graduates whose courses include a module on the indigenous microbiota of humans. It will also be useful to professional scientists, clinicians, and others who are keen to know more about the human microbiota and its role in health and disease.

Garland Science
Market: Microbiology
September 2018: 504pp
Hb: 978-1-138-34278-1: **£190.00**
Pb: 978-0-815-34585-5: **£75.00**
eBook: 978-1-351-06836-9
* For **full contents** and more information, visit: **www.routledge.com/9780815345855**

4th Edition • TEXTBOOK

Veterinary Clinical Epidemiology

From Patient to Population



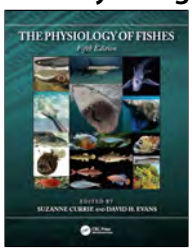
Ronald D. Smith, University of Illinois College of Veterinary Medicine, Urbana, USA

Ideal for veterinary students, residents and clinicians, the fourth edition of this bestselling textbook has been fully updated in line with developments in research and teaching. The logical chapter progression reflects the stages in a clinical case work-up and how epidemiological concepts and methods contribute. This new edition includes self-evaluation questions based on edited clinical research abstracts of online full-text reports, providing a template for student evaluation. The updated book includes guidelines for improving patient and population health outcomes, and detecting emerging diseases through systematic evaluation of patient encounters and electronic medical records.

CRC Press
Market: Life Science
October 2019: 254 x 178: 271pp
Hb: 978-1-138-39298-4: **£190.00**
Pb: 978-1-138-39242-7: **£74.99**
eBook: 978-0-429-40219-7
* For **full contents** and more information, visit: **www.routledge.com/9781138392427**

5th Edition • TEXTBOOK • NEW EDITION

The Physiology of Fishes



Edited by **Suzanne Currie** and **David H. Evans**

Series: CRC Marine Biology Series

The fifth edition of *The Physiology of Fishes* represents a compendium of knowledge across fish physiology, collecting up-to-date research into an easy-to-access single textbook. Written by the leaders in the field, it provides a comprehensive, accessible review of the core topics, integrating physiology with environmental science, ecology, evolution, and molecular cell biology. New chapters address Epigenetics, Biomechanics and Locomotion, and Behaviour and Learning. Each chapter contains an extensive bibliography, providing readers with the best sources from the primary literature.

CRC Press
Market: Life Science
September 2020: 279 x 216: 256pp
Hb: 978-0-367-54109-5: **£190.00**
Pb: 978-0-367-47755-4: **£79.99**
eBook: 978-1-003-03640-1
* For **full contents** and more information, visit: **www.routledge.com/9780367477554**

TEXTBOOK • READER

Unifying Microbial Mechanisms

Shared Strategies of Pathogenesis

Michael F. Cole

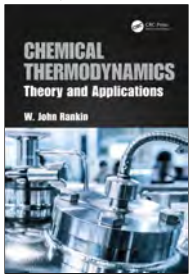
Microbial pathogenesis is the study of the mechanisms by which microbes cause infectious disease and make their hosts (humans) ill. Bacterial infections thought to be easily treatable are again a huge cause for concern with the rise of antibiotic resistance. There are very few effective antiviral drugs threatening epidemics such as bird flu and the outbreaks of viruses such the recent (and ongoing) Ebola crisis. Parasitic diseases continue to pose a heavy burden in the developing world and with climate change could spread into the developed world. There is therefore an urgent need to understand microbial mechanisms, with research programmes and university courses dedicated to th

Garland Science
Market: US - Other Texts - 231
September 2019: 254 x 178: 364pp
Hb: 978-0-367-20664-2: **£140.00**
Pb: 978-0-815-34540-4: **£49.99**
eBook: 978-0-429-26277-7
* For **full contents** and more information, visit: **www.routledge.com/9780815345404**

TEXTBOOK • READER

Chemical Thermodynamics

Theory and Applications



W.J. Rankin

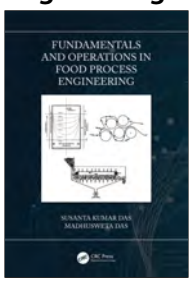
This book develops the theory of chemical thermodynamics from first principles, demonstrates its relevance across scientific and engineering disciplines, and shows how thermodynamics can be used as a practical tool for understanding natural phenomenon and developing and improving technologies and products.

The book provides the necessary foundations for the intelligent use of thermodynamic software packages. Another unique aspect is the inclusion of three applications chapters: heat and energy aspects of processing; the thermodynamics of metal production and recycling; and applications of electrochemistry.

CRC Press
Market: Chemical Engineering
November 2019: 254 x 178: 344pp
Hb: 978-0-367-22247-5: **£89.99**
eBook: 978-0-429-27725-2
* For **full contents** and more information, visit: **www.routledge.com/9780367222475**

TEXTBOOK • READER

Fundamentals and Operations in Food Process Engineering



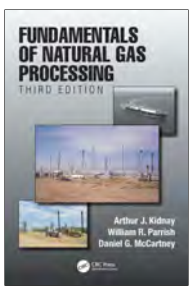
Susanta Kumar Das, Indian Institute of Technology, Kharagpur, India and **Madhusweta Das**, Indian Institute of Technology, Kharagpur, India

'Fundamentals and Operations in Food Process Engineering' deals with basic engineering principles and transport processes applied to food processing, followed by specific unit operations with large number of worked out examples and problems for practice in each chapter. This book is divided into four sections namely, fundamentals in food process engineering, mechanical operations in food processing, thermal operations in food processing and mass transfer operations in food processing. This volume aims at students pursuing courses on food science and food technology including broader section of scientific personnel working in food processing and related industries.

CRC Press
Market: Engineering - Chemical
March 2019: 254 x 178: 604pp
Hb: 978-1-466-56090-1: **£105.00**
eBook: 978-0-429-05876-9
* For **full contents** and more information, visit: **www.routledge.com/9781466560901**

3rd Edition • TEXTBOOK

Fundamentals of Natural Gas Processing, Third Edition



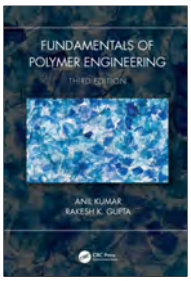
Arthur J. Kidnay, Colorado School of Mines, Golden, USA, **William R. Parrish**, ConocoPhillips (Retired), Brigantine, New Jersey, USA and **Daniel G. McCartney**, Black & Veatch, Overland Park, Kansas, USA

Offering indispensable insight from experts in the field, this book provides an introduction to the gas industry and the processes required to convert wellhead gas into valuable natural gas and hydrocarbon liquids products including LNG. The authors compile information from the literature, meeting proceedings, short courses, and their own work experiences to give an accurate picture of where gas processing technology stands today as well as to highlight relatively new technologies. Aimed at students as well as natural gas processing professionals, this edition includes discussion questions and exercises designed to reinforce important concepts.

CRC Press
Market: Engineering - Chemical
October 2019: 254 x 178: 498pp
Hb: 978-1-138-61279-2: **£110.00**
eBook: 978-0-429-46494-2
Prev. Ed Hb: 978-1-420-08519-8
* For **full contents** and more information, visit: **www.routledge.com/9781138612792**

3rd Edition • TEXTBOOK • READER

Fundamentals of Polymer Engineering, Third Edition



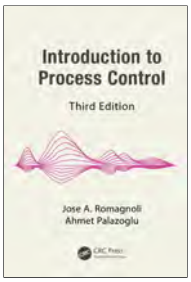
Anil Kumar and **Rakesh K. Gupta**

This textbook for a first course on polymers assumes some familiarity with thermodynamics and transport phenomena.It covers physical and chemical aspects and the concept of property being determined by structure. It discusses polymer synthesis, associated kinetics and molecular weights and uses this information for reactor design. It covers emulsion polymerization, polymer characterization and thermodynamics, and behavior of polymers as melts, solutions and solids. It examines crystallization, diffusion of and through polymers, polymer processing, and introduces new information on polyolefin technology, biobased plastics, and post-consumer plastic recycling. Chapters updated throughout.

CRC Press
Market: Polymer Science
December 2018: 254 x 178: 616pp
Hb: 978-1-498-75950-2: **£95.00**
eBook: 978-0-429-39850-6
Prev. Ed Hb: 978-0-824-70867-2
* For **full contents** and more information, visit: **www.routledge.com/9781498759502**

3rd Edition • TEXTBOOK • READER

Introduction to Process Control



Jose A. Romagnoli, Louisiana State University, Baton Rouge and **Ahmet Palazoglu**, University of California, Davis, USA

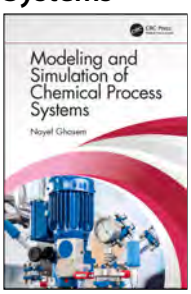
Series: Chemical Industries

The new edition blends conventional topics with a modern perspective of integrated process operation, control, and information systems. Updated throughout, it addresses smart manufacturing, new data preprocessing techniques, and machine learning and artificial intelligence concepts. It guides the reader to resources needed to solve modeling, classification, and monitoring problems. It introduces the link between process optimization and process control and links discussion of modern architectures of industrial computer control systems with real case studies and applications to pilot-scale operations. It features exercises throughout and downloadable MATLAB toolboxes to reinforce learning.

CRC Press
Market: Engineering - Chemical
July 2020: 235 x 156: 740pp
Hb: 978-0-367-36778-7: **£120.00**
eBook: 978-0-429-35139-6
Prev. Ed Hb: 978-1-439-85486-0
* For **full contents** and more information, visit: **www.routledge.com/9780367367787**

TEXTBOOK • READER

Modeling and Simulation of Chemical Process Systems



Nayef Ghasem, United Arab Emirates University, Al-Ain

The textbook teaches readers how to model and simulate a unit process operation through developing mathematical model equations, solving model equations manually, and comparing results with efficient software. The book covers both lumped parameter systems and distributed parameter systems and uses MATLAB and Simulink to solve the system model equations for lumped parameter systems and for distributed parameter systems generated simplified partial differential equations are solved using COMSOL, an effective tool to solve PDE using fine element method. The book includes end of chapter problems and worked examples and summarizes reader goals at start of every chapter.

CRC Press
Market: Engineering - Chemical
November 2015: 235 x 156: 518pp
Hb: 978-1-138-56851-8: **£115.00**
eBook: 978-0-203-70508-7
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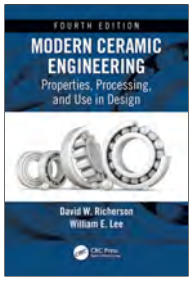
4th Edition • TEXTBOOK

Modern Ceramic Engineering

Properties, Processing, and Use in Design, Fourth Edition



David W. Richerson, Retired, University of Utah. and **William E. Lee**

This edition includes new information in almost every chapter, as well as two new chapters that present a variety of relevant case studies. It includes updated content on nanotechnology, the use of ceramics in integrated circuits, flash drives, and digital cameras, and the role of miniaturization that has made our modern digital devices possible. It also highlights the increasing importance of modeling and simulation.

CRC Press
Market: Materials Science
May 2018: 254 x 178: 836pp
Hb: 978-1-498-71691-8: **£120.00**
eBook: 978-0-429-48824-5
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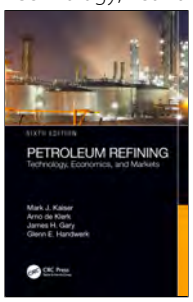
6th Edition • TEXTBOOK

Petroleum Refining

Technology, Economics, and Markets, Sixth Edition



Mark J. Kaiser, Louisiana State University, Baton Rouge, USA, **Arno de Klerk**, **James H. Gary**, Colorado School of Mines, Golden, USA and **Glenn E. Handwerk**, Consulting Chemical Engineer, Golden, Colorado, USA

One of the few petroleum refining textbooks for academic use, this updated edition provides broad and rigorous coverage of all the process technologies of the industry along with discussions of crude oil properties, product specifications, capital cost curves, environmental regulation, and process operations. The book contains a review and edit of the solution manual with new homework problems and relevant interface material that adds to its relevancy and broadens its audience without distracting from the technical aspects.

CRC Press
Market: Chemical Engineering
September 2019: 254 x 178: 722pp
Hb: 978-1-466-56300-1: **£74.99**
eBook: 978-0-429-18889-3
Prev. Ed Hb: 978-0-849-37038-0
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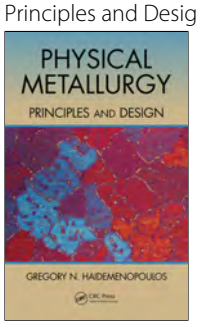
TEXTBOOK • READER

Physical Metallurgy

Principles and Design



Gregory N. Haidemenopoulos

This book focuses on the processing–structure–-properties triangle as it applies to metals and alloys. It introduces the fundamental principles of physical metallurgy and the design methodologies for alloys and processing. It discusses the structure and change of structure through phase transformations as well as strengthening mechanisms and mechanical properties as they relate to structure.

CRC Press
Market: Materials Science
January 2018: 235 x 156: 490pp
Hb: 978-1-138-62768-0: **£120.00**
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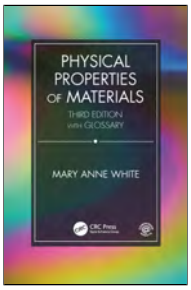
* For **full contents** and more information, visit: **www.routledge.com/9781138627680**

3rd Edition • TEXTBOOK • READER

Physical Properties of Materials, Third Edition



Mary Anne White, Dalhousie University, Halifax, Nova Scotia, Canada

The book focuses on the optical, thermal, electrical, magnetic and mechanical properties of materials. It introduces various materials via their properties and application of materials through tutorials via a companion website. In comparison with other textbooks it has broader coverage of physical properties and deep connections concerning the relationship between structure and origins of the properties. New topics include reference to the latest research topics in materials science and engineering, including boron nitride nanotubes, new cloaking technologies, new energy storage materials, and materials for renewable energy capture. It now features a glossary at the end of the book.

CRC Press
Market: Materials Science
October 2018: 235 x 156: 518pp
Hb: 978-1-138-56917-1: **£120.00**
Pb: 978-1-138-60510-7: **£56.99**
eBook: 978-0-429-46826-1
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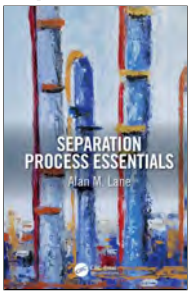
TEXTBOOK • READER

Separation Process Essentials



Alan M. Lane, The University of Alabama

Separation Process Essentials provides an interactive approach for students to learn the main separation processes (distillation, absorption, stripping, and solvent extraction) using material and energy balances with equilibrium relationships, while referring readers to other more complete works when needed. Membrane separations are included as an example of non-equilibrium processes.

This book is aimed at second and third year undergraduate students in Chemical engineering, as well as professionals in the field of Chemical engineering, and can be used for a one semester course in separation processes and unit operations.

CRC Press
Market: Engineering - Chemical
October 2019: 235 x 156: 374pp
Hb: 978-1-138-08608-1: **£89.99**
eBook: 978-1-315-11113-1
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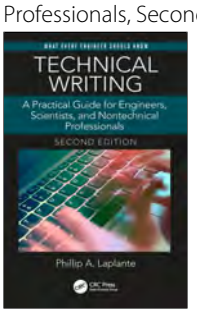
2nd Edition • TEXTBOOK • READER

Technical Writing

A Practical Guide for Engineers, Scientists, and Nontechnical Professionals, Second Edition



Phillip A. Laplante, The Pennsylvania State University, Malvern, USA

Series: What Every Engineer Should Know

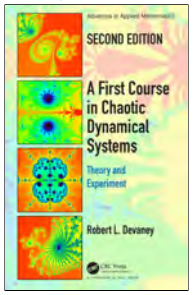
The second edition enables readers to write, edit, and publish materials of a technical nature, including books, articles, reports, and electronic media. In addition, a focus on writing for the nontechnical persons working in the technology world and the nonnative English speaker has been incorporated.

CRC Press
Market: Engineering - General
August 2018: 235 x 156: 300pp
Hb: 978-1-138-60696-8: **£120.00**
Pb: 978-1-138-62810-6: **£42.99**
eBook: 978-0-429-46739-4
Prev. Ed Pb: 978-1-439-82085-8
* For **full contents** and more information, visit: **www.routledge.com/9781138628106**

2nd Edition • TEXTBOOK • READER

A First Course In Chaotic Dynamical Systems

Theory And Experiment



Robert L. Devaney

The first text to introduce modern topics in dynamical systems at the undergraduate level, the book integrates both theory and computer experiments into its coverage of contemporary ideas. A classic, it offers a gradual introduction to the basic mathematical ideas behind such topics as chaos, fractals, Newton's method, symbolic dynamics, the Julia set, and the Mandelbrot set. It includes biographies of some of the leading researchers in the field. The new edition offers a heavily revised chapter on chaos and an emphasis on encouraging student research and experiment. The book is accessible to readers with only a background in calculus. Many new examples and exercises and updated references.

Chapman and Hall/CRC
Market: Mathematics
May 2020: 235 x 156: 328pp
Hb: 978-0-367-23599-4: **£74.99**
eBook: 978-0-429-28066-5
Prev. Ed Hb: 978-0-201-55406-9
* For **full contents** and more information, visit: **www.routledge.com/9780367235994**

TEXTBOOK • READER

Additive Combinatorics

A Menu of Research Problems

Bela Bajnok, Gettysburg College, USA

Series: Discrete Mathematics and Its Applications

Additive Combinatorics: A Menu of Research Problems is the first book of its kind to provide readers with an opportunity to actively explore the relatively new field of additive combinatorics. The author has written the book specifically for students of any background and proficiency level, from beginners to advanced researchers. It features an extensive menu of research projects that are challenging and engaging at many different levels. The questions are new and unsolved, incrementally attainable, and designed to be approachable with various methods.

Chapman and Hall/CRC
Market: Mathematics
April 2018: 254 x 178: 410pp
Hb: 978-0-815-35301-0: **£74.99**
eBook: 978-1-351-13762-1
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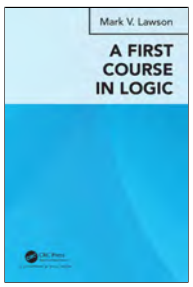
TEXTBOOK • READER

A First Course in Logic



Mark Verus Lawson

A First Course in Logic is an introduction to first-order logic suitable for first and second year mathematicians and computer scientists. There are three components to this course: propositional logic; Boolean algebras; and predicate/first-order, logic. Logic is the basis of proofs in mathematics — how do we know what we say is true? — and also of computer science — how do I know this program will do what I think it will?

CRC Press
Market: Mathematics
November 2018: 235 x 156: 250pp
Hb: 978-0-815-38664-3: **£130.00**
Pb: 978-0-815-38665-0: **£56.99**
eBook: 978-1-351-17538-8
* For **full contents** and more information, visit: **www.routledge.com/9780815386650**

TEXTBOOK • READER

Advanced Functional Analysis

Eberhard Malkowsky, University of Nis, Serbia and **Vladimir Rakočević**, University of Nis, Serbia

Advanced Functional Analysis is a self-contained and comprehensive reference for advanced functional analysis and can serve as a guide for related research. The book can be used as a textbook in advanced functional analysis, which is a modern and important field in mathematics, for graduate and postgraduate courses and seminars at universities. At the same time, it enables the interested readers to do their own research.

CRC Press
Market: Mathematics
February 2019: 254 x 178: 464pp
Hb: 978-1-138-33715-2: **£100.00**
Pb: 978-0-367-65656-0: **£42.99**
eBook: 978-0-429-44259-9
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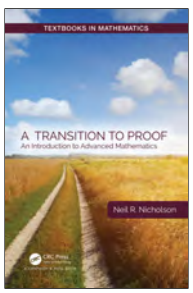
TEXTBOOK • READER

A Transition to Proof

An Introduction to Advanced Mathematics



Neil R. Nicholson

Series: Textbooks in Mathematics

A Transition to Proof: An Introduction to Advanced Mathematics describes writing proofs as a creative process. There is a lot that goes into creating a mathematical proof before writing it. Ample discussion of how to figure out the "nuts and bolts'" of the proof takes place: thought processes, scratch work and ways to attack problems. Readers will learn not just how to write mathematics but also how to do mathematics. They will then learn to communicate mathematics effectively.

Chapman and Hall/CRC
Market: Mathematics
April 2019: 235 x 156: 462pp
Hb: 978-0-367-20157-9: **£74.99**
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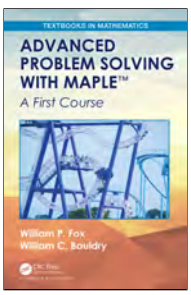
TEXTBOOK • READER

Advanced Problem Solving with Maple

A First Course



William P. Fox, U.S. Naval Post Graduate School and **William C. Bauldry**

Series: Textbooks in Mathematics

Problem Solving is essential to solve real-world problems. The text applies the mathematical modeling process by formulating, building, solving, analyzing, and criticizing mathematical models. It is intended for a course introducing students to mathematical topics they will revisit within their further studies. The authors present mathematical modeling topics using Maple as the computer algebra system for solving mathematical equations as well as obtaining plots that help us perform our analyses. The book presents cogent applications demonstrate an effective use of a Maple, provide discussions of the results obtained using Maple, and stimulate thought and analysis of additional applications

Chapman and Hall/CRC
Market: Mathematics
May 2019: 235 x 156: 358pp
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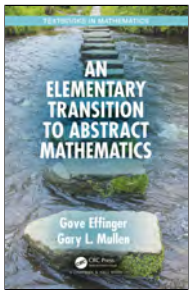
TEXTBOOK • READER

An Elementary Transition to Abstract Mathematics



Gove Effinger, Skidmore College, New York, USA and **Gary L. Mullen**

Series: Textbooks in Mathematics

An Elementary Transition to Abstract Mathematics will help students move from introductory courses to those where rigor and proof play a much greater role. The text is organized into five basic parts: the first looks back on selected topics from pre-calculus and calculus, treating them more rigorously, and it covers various proof techniques; the second part covers induction, sets, functions, cardinality, complex numbers, permutations, and matrices; the third part introduces basic number theory including applications to cryptography; the fourth part introduces key objects from abstract algebra; and the final part focuses on polynomials.

CRC Press
Market: Statistics
October 2019: 235 x 156: 292pp
Hb: 978-0-367-33693-6: **£74.99**
eBook: 978-0-429-32481-9
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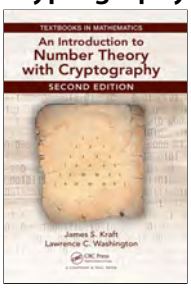
2nd Edition • TEXTBOOK • READER

An Introduction to Number Theory with Cryptography



James Kraft, Gilman School, Baltimore, Maryland, USA and **Lawrence Washington**

Series: Textbooks in Mathematics

Building on the success of the first edition, *An Introduction to Number Theory with Cryptography, Second Edition,* increases coverage of the popular and important topic of cryptography, integrating it with traditional topics in number theory.

The authors have written the text in an engaging style to reflect number theory's increasing popularity. The book is designed to be used by sophomore, junior, and senior undergraduates, but it is also accessible to advanced high school students and is appropriate for independent study. It includes a few more advanced topics for students who wish to explore beyond the traditional curriculum.

Chapman and Hall/CRC
Market: Mathematics
January 2018: 235 x 156: 602pp
Hb: 978-1-138-06347-1: **£99.99**
eBook: 978-1-351-66411-0
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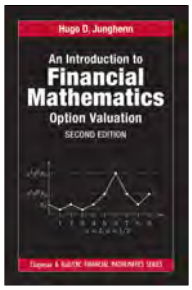
2nd Edition • TEXTBOOK • READER

An Introduction to Financial Mathematics

Option Valuation



Hugo D. Junghenn, The George Washington University, Washington, D.C., USA

Series: Chapman and Hall/CRC Financial Mathematics Series

Designed for readers having a background in standard multivariable calculus, *Introduction to Financial Mathematics: Option Valuation, Second Edition* is a well-rounded primer to the mathematics and models used in the valuation of financial derivatives. New examples and exercises have been added in this second edition as well as tables and graphs generated by Microsoft Excel VBA modules available on the author's website.

Chapman and Hall/CRC
Market: Finance/Mathematics
March 2019: 235 x 156: 316pp
Hb: 978-0-367-20882-0: **£89.99**
eBook: 978-0-429-26393-4
Prev. Ed Hb: 978-1-439-88911-4
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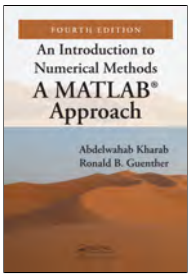
4th Edition • TEXTBOOK • READER

An Introduction to Numerical Methods

A MATLAB® Approach, Fourth Edition



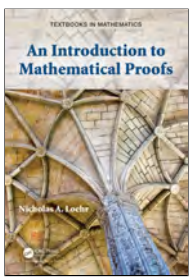
Abdelwahab Kharab, Department of Mathematics, Abu Dhabi University, United Arab Emirates and **Ronald Guenther**

Previous editions of this popular textbook offered an accessible and practical introduction to numerical analysis. *An Introduction to Numerical Methods: A MATLAB Approach, Fourth Edition* continues to present a wide range of useful and important algorithms for scientific and engineering applications. The authors use MATLAB to illustrate each numerical method, providing full details of the computed results so that the main steps are easily visualized and interpreted. This edition also includes a new chapter on Dynamical Systems and Chaos.

CRC Press
Market: Mathematics
July 2018: 254 x 178: 631pp
Hb: 978-1-138-09307-2: **£79.99**
eBook: 978-1-315-10704-2
Prev. Ed Hb: 978-1-439-86899-7
* For **full contents** and more information, visit: **www.routledge.com/9781138093072**

TEXTBOOK • READER

An Introduction to Mathematical Proofs



Nicholas A. Loehr, Virginia Tech, Virginia, USA

Series: Textbooks in Mathematics

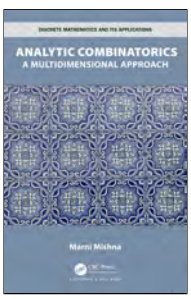
The text contains an introduction to mathematical proofs, constituting the standard core material in a course for mathematics majors. The book is divided into approximately fifty brief lectures. Each lecture corresponds to a single class meeting. The lecture format has several advantages. New material is presented in smaller chunks that are easier to digest in a single reading or class meeting. The book retains the conversational style of a lecture, while maintaining the level of precision and rigor. Every lecture ends with a review of the main points, and review lectures give summaries of each major section. Heavy emphasis is placed on proof templates, proof outlines for complex statements.

CRC Press
October 2019: 254 x 178: 412pp
Hb: 978-0-367-33823-7: **£84.99**
eBook: 978-0-429-32258-7
* For **full contents** and more information, visit: **www.routledge.com/9780367338237**

TEXTBOOK • READER

Analytic Combinatorics

A Multidimensional Approach



Marni Mishna

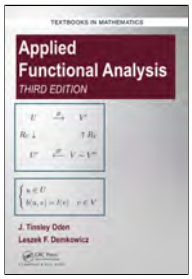
Series: Discrete Mathematics and Its Applications

Analytic Combinatorics: A Multidimensional Approach is written in a reader-friendly fashion to better facilitate the understanding of the subject. Naturally, it is a firm introduction to the concept of analytic combinatorics and is a valuable tool to help readers better understand discrete objects. Primarily, the textbook is a gateway to more detailed and involved study and the topics covered such as the interactions between complex analysis and combinatorics will lead readers through number theory, algebraic geometry, probability, and formal language theory.

Chapman and Hall/CRC
Market: Mathematics
November 2019: 235 x 156: 252pp
Hb: 978-1-138-48976-9: **£74.99**
eBook: 978-1-351-03682-5
* For **full contents** and more information, visit: **www.routledge.com/9781138489769**

3rd Edition • TEXTBOOK • READER

Applied Functional Analysis



J. Tinsley Oden, University of Texas at Austin, USA and **Leszek Demkowicz**, The University of Texas at Austin, USA

Series: Textbooks in Mathematics

The textbook for Funcational Analysis provides not only solid mathematical foundations for the subject but, with many examples drawing from mechanics and science, motivates an engineering or science student to study the subject, and provides the necessary connections with applications. The first part covers an intro to modern mathematics, linear algebra, Lebesque measure and integration theory, and topology with metric spaces. The last two chapters cover the actual subject - theory of Banach and Hilbert spaces, finishing with a short introduction to Spectral Theory.

Chapman and Hall/CRC
Market: Mathematics
January 2018: 254 x 178: 632pp
Hb: 978-1-498-76114-7: **£120.00**
eBook: 978-1-315-11948-9
Prev. Ed Hb: 978-1-420-09195-3
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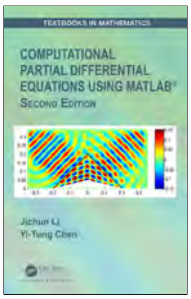
2nd Edition • TEXTBOOK • READER

Computational Partial Differential Equations Using MATLAB®



Jichun Li, University of Nevada-Las Vegas and **Yi-Tung Chen**, University of Nevada-Las Vegas

Series: Textbooks in Mathematics

In this popular text for an Numerical Analysis course, the authors introduce several major methods of solving various partial differential equations (PDEs) including elliptic, parabolic, and hyperbolic equations. It covers traditional techniques including the classic finite difference method, finite element method, and state-of-the-art numercial methods.The text uniquely emphasizes both theoretical numerical analysis and practical implementation of the algorithms in MATLAB. This new edition includes a new chapter, Finite Value Method, the presentation has been tightened, new exercises and applications are included, and the text refers now to the latest release of MATLAB.

CRC Press
Market: Mathematics
October 2019: 235 x 156: 422pp
Hb: 978-0-367-21774-7: **£89.99**
eBook: 978-0-429-26602-7
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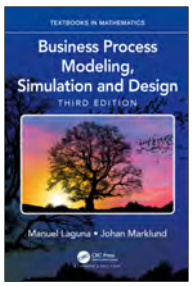
3rd Edition • TEXTBOOK • READER

Business Process Modeling, Simulation and Design



Manuel Laguna, University of Colorado at Boulder, USA and **Johan Marklund**, Lund University, Sweden

Business Process Modeling, Simulation and Design, Third Edition provides students with a comprehensive coverage of a range of analytical tools used to model, analyze, understand, and ultimately design business processes.

The new edition of this very successful textbook includes a wide range of approaches such as graphical flowcharting tools, cycle time and capacity analyses, queuing models, discrete-event simulation, simulation-optimization, and data mining for process analytics.

The book focuses on the use of discrete event simulation as the main tool for analyzing, modeling, and designing effective business processes. .

Chapman and Hall/CRC
Market: Engineering - Industrial & Manufacturing
December 2018: 254 x 178: 542pp
Hb: 978-1-138-06173-6: **£95.00**
eBook: 978-1-315-16211-9
Prev. Ed Hb: 978-1-439-88525-3
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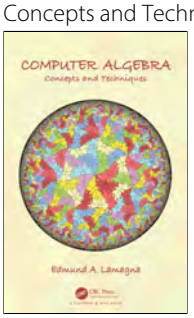
TEXTBOOK • READER

Computer Algebra

Concepts and Techniques



Edmund A. Lamagna

The goal of *Computer Algebra: Concepts and Techniques* is to demystify computer algebra systems for a wide audience, including students, faculty, and professionals in scientific fields such as computer science, mathematics, engineering, and physics. Unlike previous books, the only prerequisites are knowledge of first year calculus and a little programming experience — a background that can be assumed of the intended audience. The book is written in a lean and lively style, with numerous examples to illustrate the issues and techniques discussed. It presents the principal algorithms and data structures, while also discussing the inherent and practical limitations of these systems.

CRC Press
Market: Mathematics
December 2018: 234x156: 372pp
Hb: 978-1-138-09314-0: **£110.00**
Pb: 978-0-367-51045-9: **£42.99**
eBook: 978-1-315-10701-1
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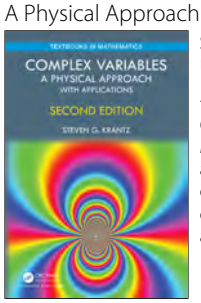
2nd Edition • TEXTBOOK • READER

Complex Variables

A Physical Approach with Applications



Steven G. Krantz, Washington University, St. Louis, Missouri, USA

Series: Textbooks in Mathematics

Complex Variables: A Physical Approach with Applications, Second Edition offers a notable revision. The emphasis remains on theory and practice. The first part of the text focuses on the fundamental concepts. The author then moves on to a detailed look at how complex variables are used in the real world. The author is among the leading textbook authors in analysis.

Chapman and Hall/CRC
Market: Mathematics
May 2019: 254 x 178: 377pp
Hb: 978-0-367-22267-3: **£89.99**
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Prev. Ed Hb: 978-1-584-88580-1
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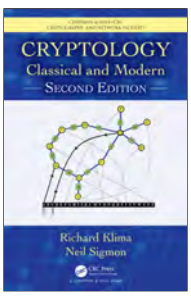
2nd Edition • TEXTBOOK • READER

Cryptology

Classical and Modern



Richard E. Klima, Appalachian State University, Boone, North Carolina, USA, **Richard Klima**, Appalachian State University, Boone, North Carolina, USA, **Neil P. Sigmon**, Radford University, Virginia, USA and **Neil Sigmon**, Radford University, Virginia, USA

Series: Chapman & Hall/CRC Cryptography and Network Security Series

Cryptology: Classical and Modern, Second Edition proficiently introduces readers to the fascinating field of cryptology. The book covers classical methods including substitution, transposition, Playfair, ADFGVX, Alberti, Vigene re, and Hill ciphers.

Chapman and Hall/CRC
Market: Computer Science & Engineering
December 2018: 235 x 156: 482pp
Hb: 978-1-138-04762-4: **£100.00**
eBook: 978-1-315-17066-4
Prev. Ed Hb: 978-1-439-87241-3
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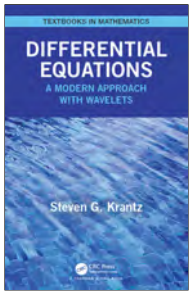
TEXTBOOK • READER

Differential Equations

A Modern Approach with Wavelets



Steven Krantz

Series: Textbooks in Mathematics

This new book from one of the most published authors in all of mathematics is an attempt to offer a new, more modern take on the Differential Equations course. Because of the theory of wavelets, Fourier analysis is ever more important and central. And applications are a driving force behind much of mathematics.This text presents a more balanced picture. It covers differential equations (both ordinary and partial), Fourier analysis and applications in equal measure and with equal weight. The Riemann integral is used throughout.

Chapman and Hall/CRC
Market: Mathematics
January 2020: 235 x 156: 481pp
Hb: 978-0-367-44409-9: **£89.99**
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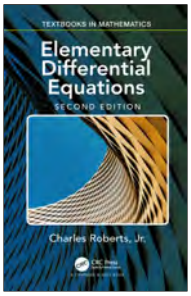
Elementary Differential Equations

Applications, Models, and Computing



Charles Roberts, Indiana State University, Terre Haute, USA

Series: Textbooks in Mathematics

This second edition is a valuable, up-to-date tool for instructors teaching courses about differential equations. It serves as an excellent introductory textbook for undergraduate students majoring in applied mathematics, computer science, various engineering disciplines and other sciences. They also will find that the textbook will aide them greatly in their professional careers because of its instructions on how to use computers to solve equations.

Chapman and Hall/CRC
Market: Mathematics
December 2018: 235 x 156: 554pp
Hb: 978-1-498-77608-0: **£110.00**
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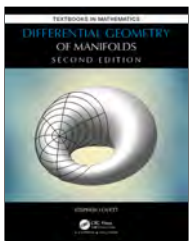
Differential Geometry of Manifolds



Stephen Lovett, Wheaton College, Illinois, USA

Series: Textbooks in Mathematics

The Second Edition presents the extension of differential geometry from curves and surfaces to manifolds in general. The book provides a broad introduction to the field of differentiable and Riemannian manifolds, tying together classical and modern formulations. The goal is to introduce manifolds in a both streamlined and mathematically rigorous way while keeping a view toward applications, particularly in physics.

Chapman and Hall/CRC
Market: Mathematics
December 2019: 235 x 191: 367pp
Hb: 978-0-367-18046-1: **£74.99**
eBook: 978-0-429-05929-2
Prev. Ed Hb: 978-1-568-81457-5
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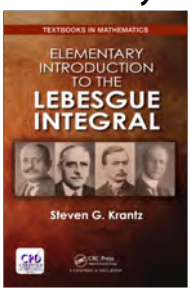
TEXTBOOK • READER

Elementary Introduction to the Lebesgue Integral



Steven G. Krantz, Washington University, St. Louis, Missouri, USA

Series: Textbooks in Mathematics

It is important and useful to have a text on the Lebesgue theory that is accessible to bright undergraduates. This is such a text. Going back to the days of Isaac Newton and Gottfried Wilhelm von Leibniz, and even to Newton's teacher Isaac Barrow, the integral has been a mainstay of mathematical analysis. The integral is a device for amalgamating information. It is a powerful and irreplaceable tool. The text concentrates on the real line. The student will be familiar with the real numbers and will be comfortable internalizing the new ideas of measure theory in that context. In addition to having copious examples and numerous figures, this book includes a Table of Notation and a Glossary.

Chapman and Hall/CRC
Market: Mathematics
April 2018: 235 x 156: 196pp
Pb: 978-1-138-48276-0: **£56.99**
eBook: 978-1-351-05682-3
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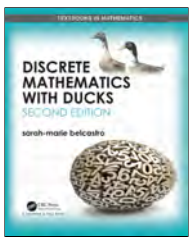
2nd Edition • TEXTBOOK • READER

Discrete Mathematics with Ducks



sarah-marie belcastro, Smith College, Northampton, Massachusetts, USA

Discrete Mathematics with Ducks is a gentle introduction for students who find the proofs and abstractions of mathematics challenging. At the same time, it provides stimulating material, which instructors can use for more advanced students. The first edition was widely well received with its amusing writing style, and numerous exercises and materials that engaged students at all levels.

The new, expanded edition continues to facilitate effective and active learning. It is designed to help students learn about discrete mathematics through problem-based activities. These are created to inspire students to understand mathematics by actively practicing and doing.

Chapman and Hall/CRC
Market: Mathematics
November 2018: 191 x 235: 658pp
Hb: 978-1-138-05259-8: **£90.00**
Pb: 978-0-367-57070-5: **£42.99**
eBook: 978-1-315-16767-1
Prev. Ed Hb: 978-1-466-50499-8
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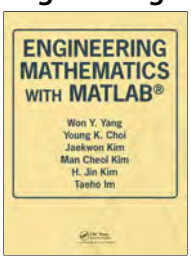
TEXTBOOK • READER

Engineering Mathematics with MATLAB



Won Y. Yang, Department of Mechanical Engineering, Chung-Ang University, Republic of Korea, **Young K. Choi**, **Jaekwon Kim**, **Man Cheol Kim**, **H. Jin Kim** and **Taeho Im**

The aim of this book is to help the readers understand the concepts, techniques, terminologies, and equations appearing in the existing books on engineering mathematics using MATLAB. Using MATLAB for computation would be otherwise time consuming, tedious and error-prone. The readers are recommended to have some basic knowledge of MATLAB.

Chapman and Hall/CRC
Market: Mathematics
February 2018: 279 x 216: 755pp
Hb: 978-1-138-05933-7: **£120.00**
eBook: 978-1-315-16368-0
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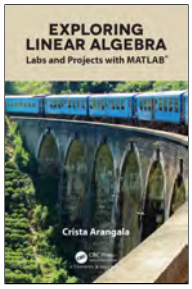
TEXTBOOK • READER

Exploring Linear Algebra

Labs and Projects with MATLAB®



Crista Arangala, Elon University, North Carolina, USA

Series: Textbooks in Mathematics

This text is meant to be a hands-on lab manual that can be used in class everyday to guide the exploration of the theory and applications of linear algebra. For the most part, labs can be used individually or in a sequence. Each lab consists of and explanation of material with integrated exercises. Some labs are split into multiple subsections and thus exercises are separated by those subsections.The exercise sections integrate problems using Mathematica demonstrations (an online tool that can be used with an browser with java capabilities) and Matlab coding. This allows students to discover the theory and applications of linear algebra in a meaningful and memorable way

Chapman and Hall/CRC
Market: Mathematics
March 2019: 235 x 156: 156pp
Hb: 978-1-138-06351-8: **£120.00**
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eBook: 978-1-315-16099-3
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TEXTBOOK • READER

Foundations of Discrete Mathematics with Algorithms and Programming

R. Balakrishnan and **Sriraman Sridharan**

Discrete Mathematics has permeated the whole of mathematics so much so it has now come to be taught even at the high school level. This book presents the basics of Discrete Mathematics and its applications to day-to-day problems in several areas. This book is intended for undergraduate students of Computer Science, Mathematics and Engineering. A number of examples have been given to enhance the understanding of concepts. The programming languages used are Pascal and C.

Chapman and Hall/CRC
Market: Mathematics
October 2018: 235 x 156: 534pp
Hb: 978-0-815-37848-8: **£110.00**
eBook: 978-1-351-01914-9
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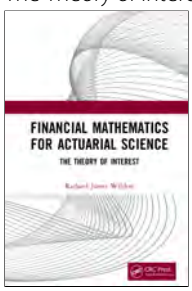
TEXTBOOK • READER

Financial Mathematics For Actuarial Science

The Theory of Interest



Richard James Wilders, North Central College, Naperville, USA

Financial Mathematics for Actuarial Science: The Theory of Interest is concerned with the measurement of interest and the various ways interest affects what is often called the time value of money (TVM). Interest is most simply defined as the compensation that a borrower pays to a lender for the use of capital. The goal of this book is to provide the mathematical understandings of interest and the time value of money needed to succeed on the actuarial examination covering interest theory.

CRC Press
Market: Mathematics
February 2020: 235 x 156: 394pp
Hb: 978-0-367-25308-0: **£89.99**
eBook: 978-0-429-28710-7
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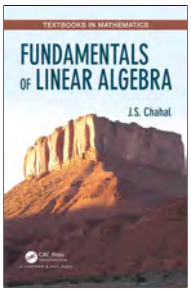
TEXTBOOK • READER

Fundamentals of Linear Algebra



J.S. Chahal, Brigham Young University

Series: Textbooks in Mathematics

Fundamentals of Linear Algebra is like no other book on the subject. By following a natural and unified approach to the subject it has, in less than 250 pages, achieved a more complete coverage of the subject than books with more than twice as many pages. For example, the textbooks in use in the United States prove the existence of a basis only for finite dimensional vector spaces. This book proves it for any given vector space.

With his experience in algebraic geometry and commutative algebra, the author defines the dimension of a vector space as its Krull dimension. By doing so, most of the facts about bases when the dimension is finite, are trivial consequences of this definition.

Chapman and Hall/CRC
Market: Mathematics
December 2018: 235 x 156: 240pp
Hb: 978-1-138-59050-2: **£105.00**
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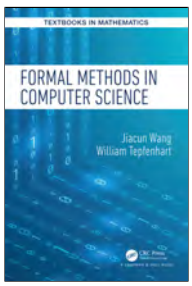
TEXTBOOK • READER

Formal Methods in Computer Science



Jiacun Wang, Monmouth University, West Long Branch, New Jersey, USA and **William Tepfenhart**, Monmouth University, West Long Branch, New Jersey, USA

Series: Textbooks in Mathematics

Formal Methods in Computer Science gives students a comprehensive introduction to formal methods and their application in software and hardware specification and verification. The textbook is ideal for undergraduate or graduate courses in computer engineering, software engineering, computer science, and information technology programs. Parts of the book are useful reading material in undergraduate computer course and as a reference guide for students researching the area of formal system specification and validation.

Chapman and Hall/CRC
Market: Computer Science & Engineering
July 2019: 235 x 156: 312pp
Hb: 978-0-367-22570-4: **£140.00**
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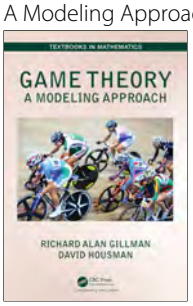
TEXTBOOK • READER

Game Theory

A Modeling Approach



Richard Alan Gillman, Valparaiso University, Indiana, USA and **David Housman**, Goshen College, IN

Series: Textbooks in Mathematics

This is an introductory game theory book that quickly moves readers through the fundamental ideas of game theory to enable them to engage in creative modeling projects based on game theoretic concepts. The book is linear, as the chapters are not independent. Readers should be able to build simple game theoretic models after chapter 3. Each subsequent chapter adds another feature to the reader's model-building repertoire.

Chapman and Hall/CRC
Market: Mathematics
May 2019: 254 x 178: 342pp
Hb: 978-1-482-24809-8: **£49.99**
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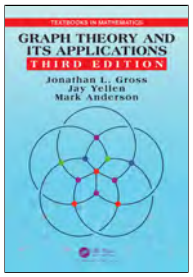
3rd Edition • TEXTBOOK • READER

Graph Theory and Its Applications



Jonathan L. Gross, Columbia University, New York, USA, **Jay Yellen**, Rollins College, Winter Park, Florida, USA and **Mark Anderson**

Series: Textbooks in Mathematics

Graph Theory and Its Applications, Third Edition is the latest edition of the international, bestselling textbook for undergraduate courses in graph theory, yet expansive enough to be used for graduate courses as well. The textbook takes a comprehensive and accessible approach to graph theory that integrates careful exposition of classical developments with emerging methods, models, and practical needs.

Chapman and Hall/CRC
Market: Mathematics
November 2018: 254 x 178: 577pp
Hb: 978-1-482-24948-4: **£70.00**
eBook: 978-0-429-42513-4
Prev. Ed Hb: 978-1-584-88505-4
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2nd Edition • TEXTBOOK • READER

Lessons in Play

An Introduction to Combinatorial Game Theory, Second Edition

Michael H. Albert, University of Otago, Dundedin, New Zealand, **Richard J. Nowakowski**, Dalhousie University, Halifax, Canada and **David Wolfe**

A thorough revision of a popular text in combinatorial game theory, this second edition reorganizes presentation to make it more widely accessible. The beginning focuses less on technical and more on conceptual material and applications. Still written in a textbook style with supporting evidence and proofs, the authors add many more exercises and examples and implement a two-step approach for some aspects of the material involving an initial introduction, examples, and basic results to be followed later by more technical and abstract results.

A K Peters/CRC Press
Market: Mathematics
April 2019: 235 x 156: 344pp
Hb: 978-1-482-24303-1: **£59.99**
eBook: 978-1-482-24304-8
Prev. Ed Hb: 978-1-568-81277-9
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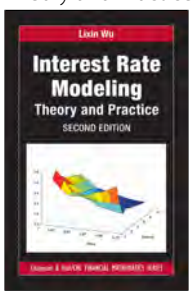
2nd Edition • TEXTBOOK • READER

Interest Rate Modeling

Theory and Practice, Second Edition



Lixin Wu

Series: Chapman and Hall/CRC Financial Mathematics Series

Containing many results that are new, or which exist only in recent research articles, *Interest Rate Modeling: Theory and Practice, 2nd Edition* portrays the theory of interest rate modeling as a three-dimensional object of finance, mathematics, and computation. It introduces all models with financial-economical justifications, develops options along the martingale approach, and handles option evaluations with precise numerical methods.

CRC Press
Market: Mathematics
February 2019: 235 x 156: 518pp
Hb: 978-0-815-37891-4: **£99.99**
Pb: 978-0-367-65655-3: **£42.99**
eBook: 978-1-351-22742-1
Prev. Ed Hb: 978-1-420-09056-7
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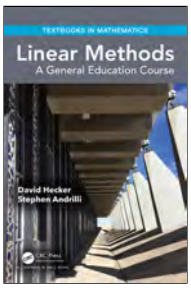
TEXTBOOK • READER

Linear Methods

A General Education Course



David Hecker and **Stephen Andrilli**, La Salle University

Series: Textbooks in Mathematics

Linear Methods: A General Education Course is expressly written for non-mathematical students, particularly freshmen taking a required core mathematics course. Rather than covering a hodgepodge of different topics as is typical for a core mathematics course, this text encourages students to explore one particular branch of mathematics, elementary linear algebra, in some depth. The material is presented in an accessible manner, as opposed to a traditional overly rigorous approach. While introducing students to useful topics in linear algebra, the book also includes a gentle introduction to more abstract facets of the subject.

Chapman and Hall/CRC
Market: Mathematics
August 2018: 235 x 156: 426pp
Hb: 978-1-138-06292-4: **£150.00**
Pb: 978-1-138-04921-5: **£79.99**
eBook: 978-1-315-16969-9
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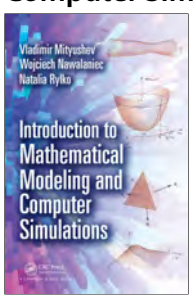
TEXTBOOK • READER

Introduction to Mathematical Modeling and Computer Simulations



Vladimir Mityushev, **Wojciech Nawalaniec** and **Natalia Rylko**

Introduction to Mathematical Modeling and Computer Simulations is written as a textbook for readers who want to understand the main principles of Modeling and Simulations in settings that are important for the applications, without using the profound mathematical tools required by most advanced texts. It can be particularly useful for applied mathematicians and engineers who are just beginning their careers. The goal of this book is to outline Mathematical Modeling using simple mathematical descriptions, making it accessible for first- and second-year students.

Chapman and Hall/CRC
Market: Mathematics
February 2018: 235 x 156: 240pp
Hb: 978-1-138-19765-7: **£66.99**
eBook: 978-1-315-27724-0
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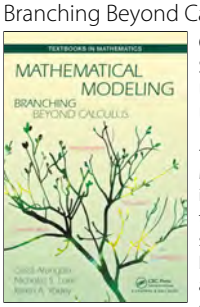
TEXTBOOK • READER

Mathematical Modeling

Branching Beyond Calculus



Crista Arangala, Elon University, North Carolina, USA, **Nicolas S. Luke**, North Carolina Agricultural and Technical State University, Greensboro, USA and **Karen A. Yokley**, Elon University, North Carolina, USA

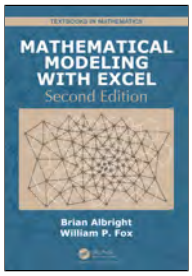
Series: Textbooks in Mathematics

Most modeling texts tend to target students with a background in either differential equations or statistics and probability. This text will begin with models at a different level, starting with students with a Calculus I background. The text will emphasize biological models as well as from other disciplines. Biology applications and models will encourage students from this discipline to appreciate higher mathematics. The emphasis on mathematical biology will be unique to this text. There are several applications that will be highlighted throughout the text, using different modeling techniques to model the same application. *Mathematica* will be integrated into the book.

Chapman and Hall/CRC
Market: Mathematics
February 2018: 254 x 178: 316pp
Hb: 978-1-498-77071-2: **£84.99**
eBook: 978-1-498-77073-6
* For **full contents** and more information, visit: **www.routledge.com/9781498770712**

2nd Edition • TEXTBOOK • READER

Mathematical Modeling with Excel



Brian Albright, Concordia University and **William P Fox**, U.S. Naval Post Graduate School

Series: Textbooks in Mathematics

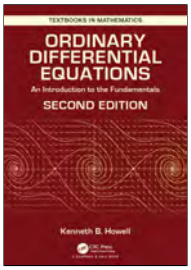
This text presents a wide variety of common types of models found in other mathematical modeling texts, as well as some new types. However, the models are presented in a very unique format. A typical section begins with a general description of the scenario being modeled. The model is then built using the appropriate mathematical tools. Then it is implemented and analyzed in Excel via step-by-step instructions. In the exercises, we ask students to modify or refine the existing model, analyze it further, or adapt it to similar scenarios.

Chapman and Hall/CRC
Market: Mathematics
November 2019: 254 x 178: 370pp
Hb: 978-1-138-59707-5: **£74.99**
eBook: 978-0-429-48713-2
* For **full contents** and more information, visit: **www.routledge.com/9781138597075**

2nd Edition • TEXTBOOK • READER

Ordinary Differential Equations

An Introduction to the Fundamentals



Kenneth B. Howell, The University of Alabama in Huntsville, USA

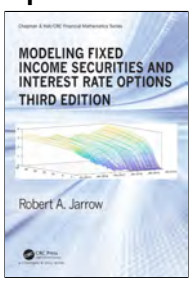
Series: Textbooks in Mathematics

The Second Edition of this successful text builds upon over ten years of in-class use. The text is unique in its approach to motivation, precision, explanations and methods. A layered approach offers an opportunity for flexible coverage and depth. Topics are introduced in a more accessible way before subsequent sections develop these further. Motivating and giving reasons for the concepts and computations is an important part of the text. The author offers an emphasis on modeling and technology use. Guides for carrying out some of the lengthier computational procedures are given with illustrative examples integrated into the discussion. An engaging writing style appeals to students.

CRC Press
Market: Mathematics
December 2019: 254 x 178: 906pp
Hb: 978-1-138-60583-1: **£89.99**
eBook: 978-0-429-34742-9
Prev. Ed Hb: 978-1-498-73381-6
* For **full contents** and more information, visit: **www.routledge.com/9781138605831**

3rd Edition • TEXTBOOK • READER

Modeling Fixed Income Securities and Interest Rate Options



Robert Jarrow

Series: Chapman and Hall/CRC Financial Mathematics Series

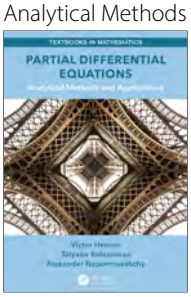
Modelling Fixed Income Securities and Interest Rate Options, 3rd Edition presents the basics of fixed-income securities in a way that, unlike competitive texts, requires a minimum of prerequisites. While other books focus heavily on institutional details of the bond market, all of which could easily be learned "on the job," the third edition of this classic textbook is more focused with presenting a coherent theoretical framework for understanding all basic models.

Chapman and Hall/CRC
Market: Mathematics
September 2019: 235 x 156: 384pp
Hb: 978-1-138-36099-0: **£74.99**
eBook: 978-0-429-43284-2
* For **full contents** and more information, visit: **www.routledge.com/9781138360990**

TEXTBOOK • READER

Partial Differential Equations

Analytical Methods and Applications



Victor Henner, Perm State University, Russia, and University of Louisville, **Tatyana Belozerova**, Perm State University, Russia and **Alexander Nepomnyashchy**, Technicion - Israel Institute of Technology; Northwestern Univeristy

Series: Textbooks in Mathematics

Partial Differential Equations: Analytical Methods and Applications exhaustively covers all the basic topics of a Partial Differential Equations (PDE) course for undergraduate students and a beginners' course for graduate students. The book is written in a simple, easy-to-read style, and it provides qualitative physical explanation of mathematical results. However, it keeps all the rigors of mathematics.

Chapman and Hall/CRC
Market: Mathematics
November 2019: 254 x 178: 396pp
Hb: 978-1-138-33983-5: **£89.99**
eBook: 978-0-429-44090-8
* For **full contents** and more information, visit: **www.routledge.com/9781138339835**

2nd Edition • TEXTBOOK • READER

Operations Research

A Practical Introduction

Michael Carter, University of Toronto, Ontario, Canada, **Camille C. Price**, Stephen F. Austin State University, Nacogdoches, Texas, USA and **Ghaith Rabadi**, Old Dominion University, Norfolk, Virginia, USA

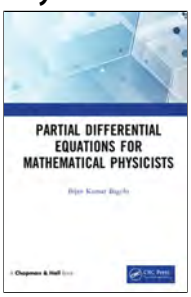
Series: Advances in Applied Mathematics

Operations Research: A Practical Introduction is just that: a hands-on approach to the field of operations research (OR) and a useful guide for using OR techniques in scientific decision making, design, analysis and management. The text accomplishes two goals. First, it provides readers with an introduction to standard mathematical models and algorithms. Second, it is a thorough examination of practical issues relevant to the development and use of computational methods for problem solving.

Chapman and Hall/CRC
Market: Mathematics
August 2018: 254 x 178: 448pp
Hb: 978-1-498-78010-0: **£130.00**
eBook: 978-1-498-78011-7
* For **full contents** and more information, visit: **www.routledge.com/9781498780100**

TEXTBOOK • READER

Partial Differential Equations for Mathematical Physicists



Bijan Kumar Bagchi

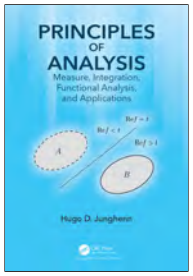
During the last five decades physical chemistry, as a subject, has undergone revolutionary change not only in topics that comes under its purview but also in fundamental concepts, perspectives, and in particular understanding. A modern text book of physical chemistry should certainly contain a chapter on water, a chapter on protein folding and protein association, modern spectroscopy, modern electrochemistry (like new insights into the classical laws of electrochemistry), surface phenomena, nucleation and phase transition, statistical mechanics. The motivation for writing this new book came largely from the lack of coverage several important topics in the existing books.

Chapman and Hall/CRC
Market: Mathematics
July 2019: 235 x 156: 238pp
Hb: 978-0-367-22702-9: **£89.99**
eBook: 978-0-429-27647-7
* For **full contents** and more information, visit: **www.routledge.com/9780367227029**

TEXTBOOK • READER

Principles of Analysis

Measure, Integration, Functional Analysis, and Applications



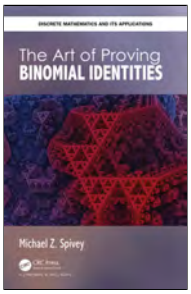
Hugo D. Junghenn, The George Washington University, Washington, D.C., USA

The aim of this text is to prepare the reader for advanced courses in analysis, probability, harmonic analysis, and applied mathematics at the doctoral level. The book is also suitable as a means to prepare for qualifying exams in real analysis. It is designed so that the reader or instructor may be selective in choosing topics to suit a variety of needs. The text includes a wide variety of detailed topics and it is hoped that the text will be seen as both a valuable reference and as an efficient and streamlined excursion through advanced real analysis. "Scenic routes" are many and, I hope, enticing, but they are optional and plainly marked.

Chapman and Hall/CRC
Market: Mathematics
April 2018: 254 x 178: 540pp
Hb: 978-1-498-77328-7: **£79.99**
eBook: 978-1-498-77329-4
* For **full contents** and more information, visit: **www.routledge.com/9781498773287**

TEXTBOOK • READER

The Art of Proving Binomial Identities



Michael Z. Spivey, University of Puget Sound, Tacoma, WA

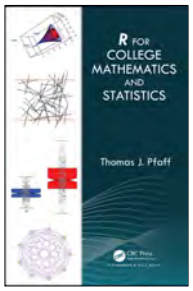
Series: Discrete Mathematics and Its Applications

The book has two goals: (1) Provide a unified treatment of the binomial coefficients, and (2) Bring together much of the undergraduate mathematics curriculum via one theme (the binomial coefficients). The binomial coefficients arise in a variety of areas of mathematics: combinatorics, of course, but also basic algebra (binomial theorem), infinite series (Newton's binomial series), differentiation (Leibniz's generalized product rule), special functions (the beta and gamma functions), probability, statistics, number theory, finite difference calculus, algorithm analysis, and even statistical mechanics.

Chapman and Hall/CRC
Market: Mathematics
May 2019: 235 x 156: 380pp
Hb: 978-0-815-37942-3: **£74.99**
eBook: 978-1-351-21582-4
* For **full contents** and more information, visit: **www.routledge.com/9780815379423**

TEXTBOOK • READER

R For College Mathematics and Statistics



Thomas Pfaff

This book encourages the use of R in the college mathematics classroom. Intructors no longer have to be limtited to ``nice'' functions in calculus classes. They can require reports and homework with graphs. They can do simulations and experiments. R can be useful for student projects, for creating graphics for teaching, as well as for scholarly work. This book presents ways R can enhance teaching mathematics.

R has the potential to help students learn mathematics due to the need for precision, understanding of symbols and functions, and the logical nature of code.

Chapman and Hall/CRC
Market: Mathematics
April 2019: 235 x 156: 338pp
Hb: 978-0-367-19685-1: **£74.99**
eBook: 978-0-367-19688-2
* For **full contents** and more information, visit: **www.routledge.com/9780367196851**

3rd Edition • TEXTBOOK

The Shape of Space

Jeffrey R. Weeks and **Jeffrey R. Weeks**

Series: Textbooks in Mathematics

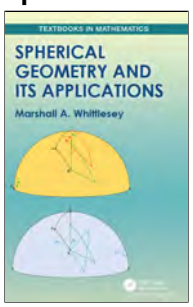
The Shape of Space, Third Edition maintains the standard of excellence set by the previous editions. This lighthearted textbook covers the basic geometry and topology of two- and three-dimensional spaces—stretching students' minds as they learn to visualize new possibilities for the shape of our universe.

Its informal exposition and engaging exercises appeal to an exceptionally broad audience, from liberal arts students to math undergraduate and graduate students looking for a clear intuitive understanding to supplement more formal texts, and even laypeople seeking an entertaining self-study book.

Chapman and Hall/CRC
Market: Mathematics
January 2020: 235 x 156: 362pp
Hb: 978-1-138-06227-6: **£120.00**
Pb: 978-1-138-06121-7: **£44.99**
eBook: 978-1-315-16255-3
* For **full contents** and more information, visit: **www.routledge.com/9781138061217**

TEXTBOOK • READER

Spherical Geometry and Its Applications



Marshall A. Whittlesey

Series: Textbooks in Mathematics

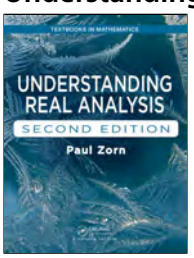
Spherical Geometry and Its Applications introduces spherical geometry and its practical applications in a mathematically rigorous form. The text can serve as a course in spherical geometry for mathematics majors. Readers from various academic backgrounds can comprehend various approaches to the subject.

The book introduces an axiomatic system for spherical geometry and uses it to prove the main theorems of the subject. It also provides an alternate approach using quaternions. The author illustrates how a traditional axiomatic system for plane geometry can be modified to produce a different geometric world.

Chapman and Hall/CRC
Market: Mathematics
August 2019: 235 x 156: 347pp
Hb: 978-0-367-19690-5: **£74.99**
eBook: 978-0-429-32880-0
* For **full contents** and more information, visit: **www.routledge.com/9780367196905**

2nd Edition • TEXTBOOK • READER

Understanding Real Analysis



Paul Zorn, St. Olaf College, Northfield, Minnesota, USA

Understanding Real Analysis, Second Edition offers substantial coverage of foundational material and expands on the ideas of elementary calculus to develop a better understanding of crucial mathematical ideas. The text meets students at their current level and helps them develop a foundation in real analysis. The author brings definitions, proofs, examples and other mathematical tools together to show how they work to create unified theory. These helps students grasp the linguistic conventions of mathematics early in the text. The text allows the instructor to pace the course for students of different mathematical backgrounds.

Chapman and Hall/CRC
Market: Mathematics
November 2017: 235 x 187: 350pp
Hb: 978-1-138-03301-6: **£56.99**
eBook: 978-1-315-31508-9
Prev. Ed Hb: 978-1-568-81415-5
* For **full contents** and more information, visit: **www.routledge.com/9781138033016**

TEXTBOOK • READER

Variational Techniques for Elliptic Partial Differential Equations

Theoretical Tools and Advanced Applications

Francisco J. Sayas, **Thomas S. Brown** and **Matthew E. Hassell**

Variational Techniques for Elliptic Partial Differential Equations , intended for graduate students studying applied math, analysis, and/or numerical analysis, provides the necessary tools to understand the structure and solvability of elliptic partial differential equations. Beginning with the necessary definitions and theorems from distribution theory, the book gradually builds the functional analytic framework for studying elliptic PDE using variational formulations. Rather than introducing all of the prerequisites in the first chapters, it is the introduction of new problems which motivates the development of the associated analytical tools.

CRC Press
Market: Mathematics
January 2019: 235 x 156: 514pp
Hb: 978-1-138-58088-6: **£79.99**
Pb: 978-0-367-65664-5: **£42.99**
eBook: 978-0-429-50706-9
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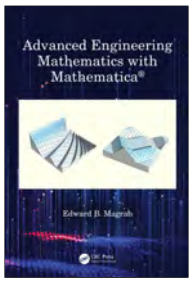
TEXTBOOK • READER

Advanced Engineering Mathematics with Mathematica



Edward B. Magrab

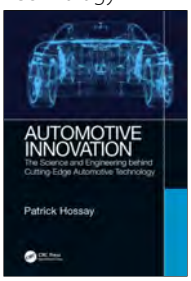
Advanced Engineering Mathematics with Mathematica presents advanced analytical solution methods that are used to solve boundary value problems in engineering and integrates these methods with over 200 Mathematica programs. It emphasizes the Sturm-Liouville system and the generation and application of orthogonal functions, which are used by the separation of variables method to solve partial differential equations.

CRC Press
Market: Mechanical Engineering
March 2020: 254 x 178: 549pp
Hb: 978-0-367-89325-5: **£130.00**
eBook: 978-1-003-01856-8
* For **full contents** and more information, visit: **www.routledge.com/9780367893255**

TEXTBOOK • READER

Automotive Innovation

The Science and Engineering behind Cutting-Edge Automotive Technology



Patrick Hossay, Stockton University, NJ, USA

Automotive Innovation: The Science and Engineering behind Cutting-Edge Automotive Technology provides a survey of innovative automotive technologies in the industry. Automobiles are rapidly changing, and this text explores these trends. IC engines, transmissions, and chassis are being improved, and there are breakthroughs in digital control, manufacturing, and materials. New vehicles demonstrate improved performance, safety and efficiency factors; and electric vehicles represent a new alternative; sensing technologies and computer processors redefine the nature of driving. The text explores these changes, the engineering and science behind them, and directions for the future.

CRC Press
Market: Engineering - Mechanical
July 2019: 254 x 178: 323pp
Hb: 978-1-138-61176-4: **£99.99**
eBook: 978-0-429-46499-7
* For **full contents** and more information, visit: **www.routledge.com/9781138611764**

2nd Edition • TEXTBOOK • READER

Advanced Heat Transfer

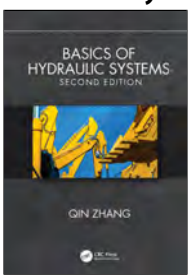
Greg F. Naterer

Advanced Heat Transfer, Second Edition provides a comprehensive presentation of intermediate and advanced heat transfer, and a unified treatment including both single and multiphase systems. It provides a fresh perspective, with coverage of new emerging fields within heat transfer, such as solar energy and cooling of microelectronics. Conductive, radiative and convective modes of heat transfer are presented, as are phase change modes. Using the latest solutions methods, the text is ideal for the range of engineering majors taking a second-level heat transfer course/module, which enables them to succeed in later coursework in energy systems, combustion, and chemical reaction engineering.

CRC Press
Market: Engineering - Mechanical
May 2018: 254 x 178: 514pp
Hb: 978-1-138-57932-3: **£130.00**
eBook: 978-1-351-26224-8
* For **full contents** and more information, visit: **www.routledge.com/9781138579323**

2nd Edition • TEXTBOOK • READER

Basics of Hydraulic Systems, Second Edition



Qin Zhang, Washington State University, Prosser, USA

Basics of Hydraulic Systems, Second Edition provides students and professionals in both engineering and technology management fields a basic book to assist in their study of fluid power systems technology. This edition is expanded to include new chapters on system modeling and hydraulic systems controls. The text covers subjects essential to understanding operating principles, configuration features, functionalities, applications of composing elements, and controls of hydraulic systems. It presents them in a systematic, accessible way, following the course of energy transmission in hydraulic power generation, distribution, deployment, modeling, and control in fluid power systems.

CRC Press
Market: Engineering - Mechanical
March 2019: 254 x 178: 338pp
Hb: 978-1-138-48466-5: **£120.00**
eBook: 978-0-429-19726-0
Prev. Ed Hb: 978-1-420-07098-9
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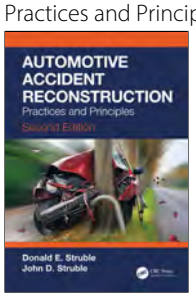
2nd Edition • TEXTBOOK • READER

Automotive Accident Reconstruction

Practices and Principles, Second Edition



Donald E. Struble and **John D. Struble**

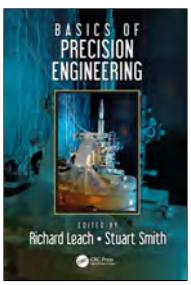
Series: Ground Vehicle Engineering

This fully updated edition presents practices and principles applicable for the reconstruction of automobile and commercial truck crashes. Like the First Edition, it starts at the very beginning with fundamental principles, information sources, and data gathering and inspection techniques for accident scenes and vehicles. It goes on to show how to analyze photographs and crash test data. The book presents tire fundamentals and shows how to use them in spreadsheet-based reverse-trajectory analysis.

CRC Press
Market: Engineering- Mechanical
February 2020: 254 x 178: 421pp
Hb: 978-0-367-41583-9: **£130.00**
eBook: 978-1-003-00897-2
Prev. Ed Hb: 978-1-466-58837-0
* For **full contents** and more information, visit: **www.routledge.com/9780367415839**

TEXTBOOK • READER

Basics of Precision Engineering



Edited by **Richard Leach**, University of Nottingham, United Kingdom and **Stuart T. Smith**, University of North Carolina, Charlotte, North Carolina, USA

BASICS OF PRECISION MACHINERY provides students and professionals a comprehensive and up-to-date survey of the field. The text reviews basic dynamics of machinery and kinematics concepts, and the design of mechanisms. Engineering materials selection and behavior is examined, along with environmental isolation. Metrology principles and applications, and dimensional metrology, are presented in detail, since these topics are essential to precision engineering; uncertainty analysis and probability are covered as well. Numerous figures, tables, examples and problems are included throughout the text, and a Solutions Manual and Figure Slides are available for professors who adopt the textbook.

CRC Press
Market: Engineering - Mechanical
March 2018: 254x178: 675pp
Hb: 978-1-498-76085-0: **£130.00**
eBook: 978-1-351-20411-8
* For **full contents** and more information, visit: **www.routledge.com/9781498760850**

4th Edition • TEXTBOOK • READER

Continuum Mechanics for Engineers

G. Thomas Mase, California Polytechnic State University, San Luis Obispo, USA, **Ronald E. Smelser**, University of North Carolina, Charlotte, USA and **Jenn Stroud Rossmann**, Lafayette College, Easton, Pennsylvania, USA

Series: Applied and Computational Mechanics

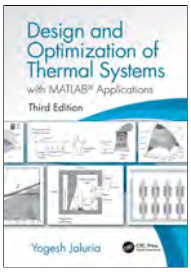
A bestselling textbook in its first three editions, Continuum Mechanics for Engineers, Fourth Edition provides engineering students with a complete, concise, and accessible introduction to advanced engineering mechanics. It provides information that is useful in emerging engineering areas, such as micro-mechanics and biomechanics. Through a mastery of this volume's contents and additional rigorous finite element training, readers will develop the mechanics foundation necessary to skilfully use modern, advanced design tools.

CRC Press
Market: Engineering - Mechanical
May 2020: 254 x 178: 450pp
Hb: 978-1-482-23868-6: **£120.00**
Prev. Ed Hb: 978-1-420-08538-9
* For **full contents** and more information, visit: **www.routledge.com/9781482238686**

3rd Edition • TEXTBOOK • READER

Design and Optimization of Thermal Systems, Third Edition

with MATLAB Applications



Yogesh Jaluria, Rutgers University, Piscataway, New Jersey, USA.

Series: Mechanical Engineering

Providing systematic approaches to thermal systems design, *Design and Optimization of Thermal Systems, Third Edition,* delivers the guidance needed to solve design problems. It presents concepts and procedures for conceptual design, formulation, modeling, simulation, feasible design, and optimization. Emphasizing modeling and simulation, the Third Edition covers the areas of manufacturability, material selection, and sensitivity, genetic and gradient search methods, and knowledge-based design methodology. This edition also features many new and revised examples and problems, and coverage of computer design analysis with MATLAB.

CRC Press
Market: Engineering - Mechanical
September 2019: 254 x 178: 614pp
Hb: 978-1-498-77823-7: **£108.00**
* For **full contents** and more information, visit: **www.routledge.com/9781498778237**

TEXTBOOK • READER

Control Systems

Classical, Modern, and AI-Based Approaches

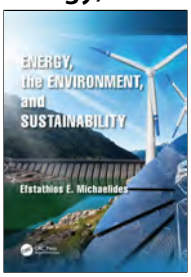
Jitendra R. Raol, Ramaiah Institute of Technology, Bangalore, India and **Ramakalyan Ayyagari**, National Institute of Technology (NIT), India

This book provides a broad and comprehensive study of the principles, mathematics, and applications for studying basic control in Mechanical, Electrical, Aerospace, and other engineering disciplines. The text builds a strong mathematical foundation of control theory, introducing linear, non-linear, digital, optimal, and robust control systems, and builds upon that foundation to address applications in emerging areas such as unmanned aicraft systems, robotic systems, and spacecraft. Numerical coverage with MATLAB® is integrated, and numerous examples and exercises are included in each chapter; and MATLAB® code will be available.

CRC Press
Market: Engineering - Electrical
July 2019: 279 x 216: 668pp
Hb: 978-0-815-34630-2: **£140.00**
eBook: 978-1-351-17080-2
* For **full contents** and more information, visit: **www.routledge.com/9780815346302**

TEXTBOOK • READER

Energy, the Environment, and Sustainability



Efstathios E. Michaelides

Series: Mechanical and Aerospace Engineering Series

Energy and the Environment explains in simple terms what the energy demand is at the present, what the environmental effects of energy use are, and what can be accomplished to alleviate the environmental effects of energy use and ensure adequate energy supply. Though technical in approach, the text uses simple explanations of engineering processes and systems and algebra-based math to be comprehensible to students in a range of disciplines. Schematic diagrams, quantitative examples, and numerous problems will help students make quantitative calculations. This will assist them in comprehending the complexity of the energy-environment balance, and to analyze and evaluate proposed solutions.

CRC Press
Market: Engineering - Mechanical
April 2018: 254 x 178: 483pp
Hb: 978-1-138-48917-2: **£130.00**
Pb: 978-1-138-03844-8: **£120.00**
eBook: 978-1-315-17735-9
* For **full contents** and more information, visit: **www.routledge.com/9781138038448**

2nd Edition • TEXTBOOK • READER

Convective Heat and Mass Transfer

S. Mostafa Ghiaasiaan, Georgia Tech University, Atlanta, USA

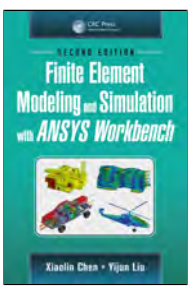
Series: Heat Transfer

Convective Heat and Mass Transfer, Second Edition, is ideal for the graduate level study of convection heat and mass transfer, with coverage of well-established theory and practice as well as trending topics such as transpiration cooling, flow in micro-channels, CFD, and diffusion and convection transport of particles. Its broad scope makes the text ideal for both Mechanical and Chemical Engineering, with mass transfer content presented so that it can be easily skipped. Numerous examples and end-of-chapter exercises are included, along with 18 appendices that cover essential property and mathematical information. Solutions and PowerPoint slides are available to qualified instructors.

CRC Press
Market: Engineering - Mechanical
June 2018: 279 x 216: 652pp
Hb: 978-0-815-36141-1: **£150.00**
eBook: 978-1-351-11275-8
* For **full contents** and more information, visit: **www.routledge.com/9780815361411**

2nd Edition • TEXTBOOK • READER

Finite Element Modeling and Simulation with ANSYS Workbench, Second Edition



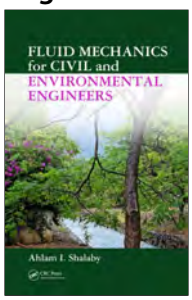
Xiaolin Chen, Washington State University, Vancouver, USA and **Yijun Liu**, University of Cincinnati, Ohio, USA

Finite Element Modeling and Simulation with ANSYS Workbench 18, Second Edition, combines finite element theory with real-world practice. Providing an introduction to finite element modeling and analysis for those with no prior experience, and written by authors with a combined experience of 30 years teaching the subject, this text presents FEM formulations integrated with relevant hands-on instructions for using ANSYS Workbench 18. Incorporating the basic theories of FEA, simulation case studies, and the use of ANSYS Workbench in the modeling of engineering problems, the book also establishes the finite element method as a powerful numerical tool in engineering design and analysis.

CRC Press
Market: Mechanical Engineering
September 2018: 254 x 178: 471pp
Hb: 978-1-138-48629-4: **£120.00**
eBook: 978-1-351-04587-2
Prev. Ed Hb: 978-1-439-87384-7
* For **full contents** and more information, visit: **www.routledge.com/9781138486294**

TEXTBOOK • READER

Fluid Mechanics for Civil and Environmental Engineers



Ahlam I. Shalaby, Howard University

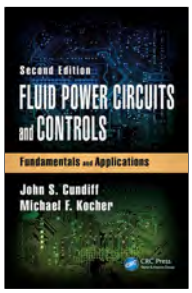
An ideal textbook for civil and mechanical engineers taking the required Introduction to Fluid Mechanics course, Engineering Fluid Mechanics: An Introduction offers clear guidance and builds a firm real-world foundation using practical examples and problem sets. Each chapter begins with a statement of objectives and includes practical examples to relate the theory to real-world engineering design challenges. The authors place special emphasis on topics that are included in the Fundamentals of Engineering exam and make the book more accessible by highlighting keywords and important concepts, including MathCAD algorithms, and providing chapter summaries of important concepts and equations.

CRC Press
Market: Fluid Mechanics
March 2018: 254 x 178: 1684pp
Hb: 978-0-849-33737-6: **£150.00**
eBook: 978-1-420-01941-4
* For **full contents** and more information, visit: **www.routledge.com/9780849337376**

2nd Edition • TEXTBOOK • READER

Fluid Power Circuits and Controls

Fundamentals and Applications, Second Edition



John S. Cundiff, Virginia Tech University, Blacksburg, USA and **Michael F. Kocher**, University of Nebraska, Lincoln, USA

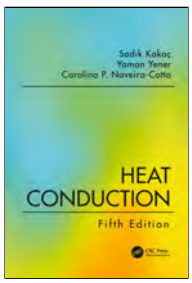
Series: Mechanical and Aerospace Engineering Series

Fluid Power Circuits and Controls: Fundamentals and Applications, Second Edition, is designed for a first course in fluid power for undergraduate engineering students. After an introduction to the design and function of components, students apply what they've learned, and consider how the component operating characteristics interact with the rest of the circuit. The Second Edition offers many new worked examples, and additional exercises and problems in each chapter. Half of these new problems involve basic analysis of specific elements, and the rest are design-oriented, emphasizing analysis of system performance. A complete Solutions Manual is available for qualified adopting instructors.

CRC Press
Market: Engineering - Mechanical
December 2019: 254 x 178: 554pp
Hb: 978-1-498-77001-9: **£120.00**
* For **full contents** and more information, visit: **www.routledge.com/9781498770019**

TEXTBOOK • READER

Heat Conduction, Fifth Edition



Sadık Kakac, **Yaman Yener** and **Carolina P. Naveira-Cotta**, Universidade Federal do Rio de Janeiro, Brazil

Heat Conduction, Fifth Edition, upholds its reputation as the leading text in the field for graduate students, and as a resource for practicing engineers. The text begins with fundamental concepts, introducing the governing equation of heat conduction, and progresses through solutions for one-dimensional conduction, orthogonal functions, Fourier series and transforms, and multidimensional problems. Integral equations, Laplace transforms, finite difference numerical methods, and variational formulations are then covered. Nanoscale conductive heat transfer coverage has been added in this new edition, along with new and revised problems, and complete problem solutions for instructors.

CRC Press
Market: Engineering - Mechanical
July 2018: 254 x 178: 542pp
Hb: 978-1-138-94384-1: **£140.00**
eBook: 978-1-315-17871-4
* For **full contents** and more information, visit: **www.routledge.com/9781138943841**

4th Edition • TEXTBOOK • READER

Heat Exchangers

Selection, Rating, and Thermal Design, Fourth Edition

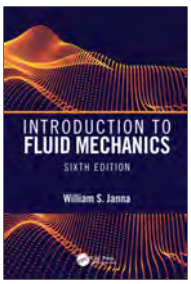
Sadik Kakaç, TOBB University of Economics and Technology, Ankara, Turkey, **Hongtan Liu**, University of Miami, Coral Gables, Florida, USA and **Anchasa Pramuanjaroenkij**, Kasetsart University, Chalermphrakiat Sakon Nakhon Province Campus, Thailand

Heat exchangers are essential in a wide range of engineering applications, including power plants, automobiles, airplanes, process and chemical industries, and heating, air conditioning and refrigeration systems. Revised and updated with new problem sets, the fourth edition presents a fully updated and systematic treatment of heat exchangers, focusing on selection, thermal-hydraulic design, and rating. The fourth edition is designed for student readers taking courses/modules in process heat transfer, thermal systems design, and heat exchanger technology, this text includes full coverage of all widely-used heat exchanger types.

CRC Press
Market: Engineering - Mechanical
February 2020: 254 x 178: 546pp
Hb: 978-1-138-60186-4: **£120.00**
eBook: 978-0-429-46986-2
Prev. Ed Hb: 978-1-439-84990-3
* For **full contents** and more information, visit: **www.routledge.com/9781138601864**

6th Edition • TEXTBOOK

Introduction to Fluid Mechanics, Sixth Edition



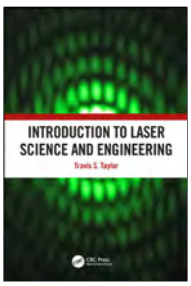
William S. Janna, University of Memphis, Tennessee, USA

Introduction to Fluid Mechanics, Sixth Edition, is intended for a first course in Fluid Mechanics, as taken by a range of engineering majors. Beginning with dimensions, units, and fluid properties, the text continues with explanation of key equations and coverage of the control-volume approach.

CRC Press
Market: Mechanical Engineering
April 2020: 254 x 178: 754pp
Hb: 978-0-367-34127-5: **£140.00**
eBook: 978-0-429-32453-6
Prev. Ed Hb: 978-1-482-21161-0
* For **full contents** and more information, visit: **www.routledge.com/9780367341275**

TEXTBOOK • READER

Introduction to Laser Science and Engineering



Travis S. Taylor, Author and Consultant, Huntsville, Alabama USA

Introduction to Laser Science and Engineering provides a modern resource for a first course in lasers for both students and professionals. Starting from simple descriptions, this text builds upon them to give a detailed modern physical understanding of the concepts behind light, optical beams and lasers.The coverage starts with the nature of light and the principles of photon absorption and transmission, leading to the amplified and stimulated emission principals governing lasers.The specifics of lasers and their application, safe use and future prospects are then covered, with a wealth of illustrations to provide readers with a visual sense of optical and laser principles.

CRC Press
Market: Engineering - Electrical
August 2019: 235 x 156: 299pp
Hb: 978-1-138-03639-0: **£110.00**
eBook: 978-1-315-17856-1
* For **full contents** and more information, visit: **www.routledge.com/9781138036390**

TEXTBOOK • READER

Introduction to Mechanism Design

with Computer Applications

Eric Constans and **Karl B. Dyer**

Introduction to Mechanism Design: with Computer Applications provides an updated approach to undergraduate Mechanism Design and Kinematics courses/modules for engineering students. The use of web-based simulations, solid modeling, and software such as MATLAB and Excel is employed to link the design process with the latest software tools for the design and analysis of mechanisms and machines. While a mechanical engineer might brainstorm with a pencil and sketch pad, the final result is developed and communicated through CAD and computational visualizations. This modern approach to mechanical design processes has not been fully integrated in most books, as it is in this new text.

CRC Press
Market: Engineering - Mechanical
August 2018: 254 x 178: 780pp
Hb: 978-1-138-74065-5: **£140.00**
eBook: 978-1-315-18326-8
* For **full contents** and more information, visit: **www.routledge.com/9781138740655**

TEXTBOOK • READER

Introduction to Product Design and Development for Engineers

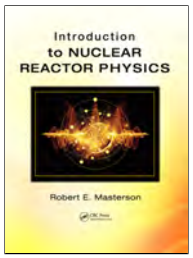
Dr. Ali Jamnia, Jamnia & Associates, Chicago, Illinois, USA

Introduction to Product Design and Development for Engineers provides guidelines and best practices for the design, development, and evaluation of engineered products. Created to serve fourth year undergraduate students in Engineering Design modules with a required project, the text covers the entire product design process and product life-cycle, from the initial concept to the design and development stages, and through to product testing, design documentation, manufacturability, marketing, and sustainability. Reflecting the author's long career as a design engineer, this text will also serve as a practical guide for students working on their capstone design projects.

CRC Press
Market: Engineering - General
June 2018: 254 x 178: 445pp
Hb: 978-1-138-55421-4: **£120.00**
eBook: 978-1-315-14893-9
* For **full contents** and more information, visit: **www.routledge.com/9781138554214**

TEXTBOOK • READER

Introduction to Nuclear Reactor Physics



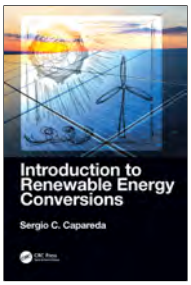
Robert E. Masterson, Virginia Polytechnic and State University, Blacksburg, USA

INTRODUCTION TO NUCLEAR REACTOR PHYSICS is the most comprehensive, modern and readable textbook for this course/module. It explains reactors, fuel cycles, radioisotopes, radioactive materials, design, and operation. Chain reaction and fission reactor concepts are presented, plus advanced coverage including neutron diffusion theory. The diffusion equation, Fisk's Law, and steady state/time-dependent reactor behavior. Numerical and analytical solutions are also covered. The text has full color illustrations throughout, and a wide range of student learning features.

CRC Press
Market: Engineering - Mechanical
December 2017: 254x203: 1079pp
Hb: 978-1-498-75148-3: **£125.00**
eBook: 978-1-498-75149-0
* For **full contents** and more information, visit: **www.routledge.com/9781498751483**

TEXTBOOK • READER

Introduction to Renewable Energy Conversions



Sergio C. Capareda, Texas A&M University, College Station, USA

Introduction to Renewable Energy Conversions examines all the major renewable energy conversion technologies, with the goal of enabling readers to formulate realistic resource assessments. The text provides step-by-step procedures for assessing renewable energy options, and then moves to the design of appropriate renewable energy strategies. The goal is for future engineers to learn the process of making resource estimates, through the introduction of more than 140 solved problems (and equal number of solved problems for teachers), over 165 engineering related equations, more than 120 figures and numerous tables to explain each renewable energy conversion type.

CRC Press
Market: Engineering- Mechanical
August 2019: 254 x 178: 456pp
Hb: 978-0-367-18850-4: **£99.99**
eBook: 978-0-429-19910-3
* For **full contents** and more information, visit: **www.routledge.com/9780367188504**

TEXTBOOK • READER

Introduction to Plant Automation and Controls

Raymond F. Gardner, U.S. Merchant Marine Academy, USA

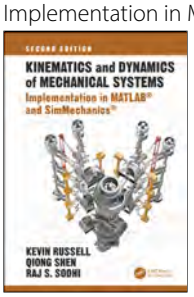
The increasing complexity of plant control systems requires engineers who can relate plant operations and behaviors to their control requirements. This book is ideal for readers with limited electrical and electronic experience, particularly those looking for a multidisciplinary approach for obtaining a practical understanding of control systems related to the best operating practices of large or small plants. It is an invaluable resource for becoming an expert in this field or as a single-source reference for plant control systems.

CRC Press
Market: Mechanical Engineering
November 2020: 254 x 178: 558pp
Hb: 978-0-367-49420-9: **£105.00**
eBook: 978-1-003-09113-4
* For **full contents** and more information, visit: **www.routledge.com/9780367494209**

2nd Edition • TEXTBOOK • READER

Kinematics and Dynamics of Mechanical Systems, Second Edition

Implementation in MATLAB® and SimMechanics®



Kevin Russell, New Jersey Institute of Technology, Newark, USA, **Qiong Shen**, Softalink LLC, Kearny, New Jersey, USA and **Rajpal S. Sodhi**, New Jersey Institute of Technology, Newark, USA

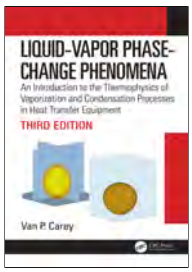
Kinematics and Dynamics of Mechanical Systems: Implementation in MATLAB® and SimMechanics®, Second Edition combines the fundamentals of mechanism kinematics, synthesis, statics and dynamics with real-world applications, and offers step-by-step instruction on the kinematic, static, and dynamic analyses and synthesis of equation systems. Written for students with no knowledge of MATLAB and SimMechanics, the text provides understanding of static and dynamic mechanism analysis, and moves beyond conventional kinematic concepts—factoring in adaptive programming, 2D and 3D visualization, and simulation, and equips readers with the ability to analyze and design mechanical systems.

CRC Press
Market: Engineering - Mechanical
September 2018: 254 x 178: 516pp
Hb: 978-1-138-58404-4: **£140.00**
eBook: 978-0-429-50625-3
Prev. Ed Hb: 978-1-498-72493-7
* For **full contents** and more information, visit: **www.routledge.com/9781138584044**

3rd Edition • TEXTBOOK • READER

Liquid-Vapor Phase-Change Phenomena

An Introduction to the Thermophysics of Vaporization and Condensation Processes in Heat Transfer Equipment, Third Edition



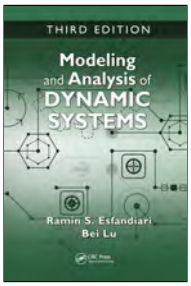
Van P. Carey, University of California, Berkeley, USA

Since the second edition of Liquid Vapor Phase Change Phenomena was written, research has substantially enhanced the understanding of the effects of nanostructured surfaces, effects of microchannel and nanonchannel geometries and the effects of extreme wetting on liquid-vapor phase change processes. This edition includes significant new coverage of microchannels and nanostructures along with many other updates. More worked examples and numerous new problems have been added along with a complete solutions manual and electronic figures for classroom projection.

CRC Press
Market: Engineering - Mechanical
February 2020: 254 x 178: 730pp
Hb: 978-1-498-71661-1: **£120.00**
Prev. Ed Hb: 978-1-591-69035-1
* For **full contents** and more information, visit: **www.routledge.com/9781498716611**

3rd Edition • TEXTBOOK • READER

Modeling and Analysis of Dynamic Systems



Ramin S. Esfandiari, California State University, Long Beach, USA, **Bei Lu**, California State University, Long Beach, USA and **Bei Lu**

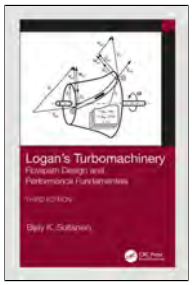
Modeling and Analysis of Dynamic Systems, Third Edition introduces MATLAB®, Simulink®, and Simscape™ and then utilizes them to perform symbolic, graphical, numerical, and simulation tasks. Written for senior level courses/modules, the textbook meticulously covers techniques for modeling a variety of engineering systems, methods of response analysis, and introductions to mechanical vibration, and to basic control systems. These features combine to provide students with a thorough knowledge of the mathematical modeling and analysis of dynamic systems. The Third Edition now includes Case Studies, expanded coverage of system identification, and updates to the computational tools included.

CRC Press
Market: Engineering - Mechanical
February 2018: 254 x 178: 617pp
Hb: 978-1-138-72642-0: **£150.00**
eBook: 978-1-315-19129-4
Prev. Ed Hb: 978-1-466-57493-9
* For **full contents** and more information, visit: **www.routledge.com/9781138726420**

3rd Edition • TEXTBOOK • READER

Logan's Turbomachinery

Flowpath Design and Performance Fundamentals, Third Edition



Bijay Sultanian, University of Central Florida, Orlando, FL

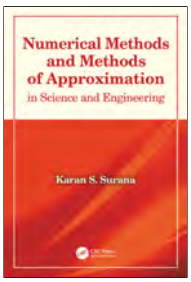
Series: Mechanical Engineering

Logan's Turbomachinery: Flowpath Design and Performance Fundamentals, Third Edition is the long-awaited revision of this classic textbook, thoroughly updated by Dr. Bijay Sultanian. While the basic concepts remain constant, turbomachinery design has advanced since the Second Edition was published in 1993. Airfoils in modern turbomachines feature three-dimensional geometries, Computational Fluid Mechanics (CFD) has become a standard design tool, and major advances have been made in the materials and manufacturing technologies that affect turbomachinery design. The new edition adresses these trends to best serve today's students, and design engineers working in turbomachinery industries.

CRC Press
Market: Engineering - Mechanical
January 2019: 254 x 178: 341pp
Hb: 978-1-138-19820-3: **£95.00**
eBook: 978-1-315-22648-4
* For **full contents** and more information, visit: **www.routledge.com/9781138198203**

TEXTBOOK • READER

Numerical Methods and Methods of Approximation in Science and Engineering



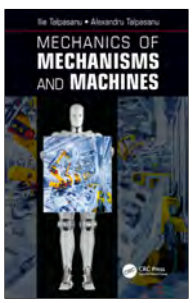
Karan S. Surana, University of Kansas, Lawrence USA

Numerical Methods and Methods of Approximation in Science and Engineering prepares students and other readers for advanced studies involving applied numerical and computational analysis. Focused on building a sound theoretical foundation, it uses a clear and simple approach backed by numerous worked examples to facilitate understanding of numerical methods and their application. Readers will learn to structure a sequence of operations into a program, using the programming language of their choice; this approach leads to a deeper understanding of the methods and their limitations. The text features highlighted examples, numerous problems, and a complete Solutions Manual for instructors.

CRC Press
Market: Engineering - Mechanical
November 2018: 254 x 178: 498pp
Hb: 978-0-367-13672-7: **£125.00**
eBook: 978-0-429-02828-1
* For **full contents** and more information, visit: **www.routledge.com/9780367136727**

TEXTBOOK • READER

Mechanics of Mechanisms and Machines



Ilie Talpasanu, Wentworth Institute of Technology, Boston, Massachusetts, USA and **Alexandru Talpasanu**

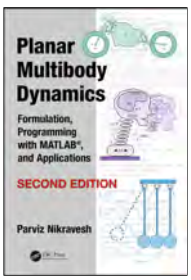
Mechanics of Mechanisms and Machines provides a practical approach to machine dynamics and kinematics for undergraduate students and mechanical engineers. It starts by analyzing simple mechanisms, and progresses to more complex examples. It will be the only textbook to cover mechanism design through the use of graphs and generation of independent equations from a matroid form.

CRC Press
Market: Engineering - Mechanical
December 2018: 235 x 156: 610pp
Hb: 978-1-498-73547-6: **£120.00**
eBook: 978-1-498-73548-3
* For **full contents** and more information, visit: **www.routledge.com/9781498735476**

2nd Edition • TEXTBOOK • READER

Planar Multibody Dynamics

Formulation, Programming with MATLAB®, and Applications, Second Edition



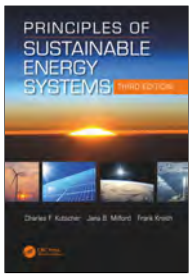
Parviz E. Nikravesh

Planar Multibody Dynamics: Formulation, Programming, and Applications, Second Edition enhances the quality and ease of design education with extensive use of the latest computerized design tools combined with coverage of classical design and dynamics of machinery principles. Using clear, concise language, the text introduces fundamental theories, computational methods, and program development for analyzing simple to complex mechanical systems. MATLAB® is used throughout, with examples begin with basic commands before introducing students to more advanced programming techniques. The routines developed in each chapter come together to form complete programs for different types of analysis.

CRC Press
Market: Engineering - Mechanical
October 2018: 254 x 178: 430pp
Hb: 978-1-138-09612-7: **£130.00**
eBook: 978-1-315-10543-7
* For **full contents** and more information, visit: **www.routledge.com/9781138096127**

3rd Edition • TEXTBOOK • READER

Principles of Sustainable Energy Systems, Third Edition



Charles F. Kutscher, National Renewable Energy Laboratory, Golden, Colorado, USA, **Jana B. Milford**, University of Colorado Boulder, USA and **Frank Kreith**, University of Colorado, Boulder, USA (retired)

Series: Mechanical and Aerospace Engineering Series

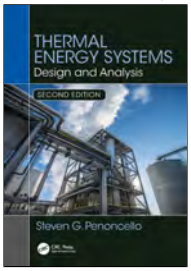
Principles of Sustainable Energy Systems, 3rd Edition surveys the range of sustainable energy sources and the tools that engineers, scientists, and policy makers use to analyze energy generation, usage, and future trends. The text provides complete and up-to-date coverage of all renewable technologies, including solar and wind power, biofuels, hydroelectric, nuclear, ocean power, and geothermal energy. The economics of energy are introduced, with the SAM software package integrated so students can explore the dynamics of energy usage and prediction. Climate and environmental factors in energy use are integrated to give a complete picture of sustainable energy analysis and planning.

CRC Press
Market: Energy & Clean Technology
September 2018: 254 x 178: 654pp
Hb: 978-1-498-78892-2: **£170.00**
eBook: 978-1-498-78893-9
Prev. Ed Hb: 978-1-466-55696-6
* For **full contents** and more information, visit: **www.routledge.com/9781498788922**

2nd Edition • TEXTBOOK • READER

Thermal Energy Systems

Design and Analysis, Second Edition



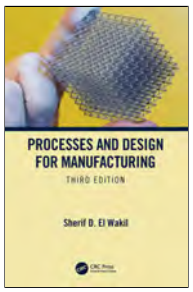
Steven G. Penoncello, University of Idaho, Moscow, USA

Thermal Energy Systems: Design and Analysis, Second Edition presents basic concepts for simulation and optimization, and introduces simulation and optimization techniques for system modeling. This text addresses engineering economy, optimization, hydraulic systems, energy systems, and system simulation. Computer modeling is presented, and a companion website provides specific coverage of EES and Excel in thermal-fluid design. Assuming prior coursework in basic thermodynamics and fluid mechanics, this fully updated and improved text will guide students in Mechanical and Chemical Engineering as they apply their knowledge to systems analysis and design, and to capstone design project work.

CRC Press
Market: Engineering - Mechanical
October 2018: 254 x 178: 623pp
Hb: 978-1-138-73589-7: **£140.00**
eBook: 978-1-315-18626-9
* For **full contents** and more information, visit: **www.routledge.com/9781138735897**

3rd Edition • TEXTBOOK • READER

Processes and Design for Manufacturing, Third Edition



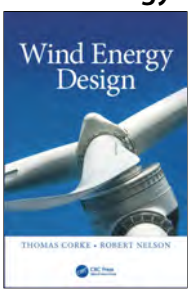
Sherif D. El Wakil, University of Massachusetts Dartmouth

Processes and Design for Manufacturing, Third Edition examines manufacturing processes from the viewpoint of the product designer, examining the selection of manufacturing methods in the early phases of design, and how this affects the constructional features of a product. Stages from design process to product development are examined, integrating evaluation of cost factors. The text emphasizes both a general design orientation and a systems approach, and covers topics such as additive manufacturing, concurrent engineering, polymeric and composite materials, cost estimation, design for assembly, and environmental factors. Appendices with materials engineering data are also included.

CRC Press
Market: Engineering - Mechanical
April 2019: 254 x 178: 551pp
Hb: 978-1-138-58108-1: **£150.00**
eBook: 978-0-429-50663-5
* For **full contents** and more information, visit: **www.routledge.com/9781138581081**

TEXTBOOK • READER

Wind Energy Design



Thomas Corke and **Robert Nelson**

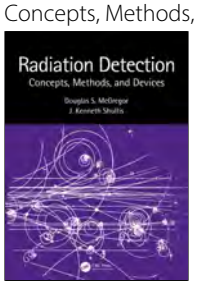
Wind Energy Systems is designed for undergraduate engineering courses, with a focus on multidisciplinary design of a wind energy system. The text covers basic wind power concepts and components - wind characteristics and modeling, rotor aerodynamics, lightweight flexible structures, wind farms, aerodynamics, wind turbine control, acoustics, energy storage, and economics. These topics are applied to produce a new conceptual wind energy design, showing the interplay of various design aspects in a complete system. An ongoing case study demonstrates the integration of various component topics, and MATLAB examples are included to show computerized design analysis procedures and techniques.

CRC Press
Market: Energy & Clean Technology
April 2018: 235 x 156: 352pp
Hb: 978-1-138-09602-8: **£120.00**
eBook: 978-1-315-10546-8
* For **full contents** and more information, visit: **www.routledge.com/9781138096028**

TEXTBOOK • READER

Radiation Detection

Concepts, Methods, and Devices



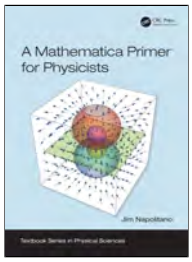
Douglas McGregor, Kansas State University, Manhattan, USA and **J. Kenneth Shultis**

Radiation Detection: Concepts, Methods, and Devices provides a modern overview of radiation detection devices and radiation measurement methods. The book topics have been selected on the basis of the authors' many years of experience designing radiation detectors and teaching radiation detection and measurement in a classroom environment. This book is designed to give the reader more than a glimpse at radiation detection devices and a few packaged equations. Rather it seeks to provide an understanding that allows the reader to choose the appropriate detection technology for a particular application, to design detectors, and to competently perform radiation measurements.

CRC Press
Market: Nuclear Engineering
September 2020: 279 x 216: 1312pp
Hb: 978-1-439-81939-5: **£140.00**
eBook: 978-1-439-81940-1
* For **full contents** and more information, visit: **www.routledge.com/9781439819395**

TEXTBOOK • READER

A Mathematica Primer for Physicists



Jim Napolitano, Temple University, Pennsylvania, USA

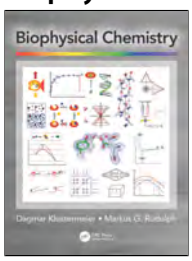
Series: Textbook Series in Physical Sciences

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
Market: Physics
March 2018: 235 x 156: 214pp
Hb: 978-1-138-48656-0: **£160.00**
Pb: 978-1-138-03509-6: **£56.99**
eBook: 978-1-315-26948-1
* For **full contents** and more information, visit: **www.routledge.com/9781138035096**

TEXTBOOK • READER

Biophysical Chemistry



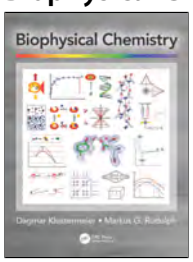
Dagmar Klostermeier, University of Muenster, Biophysical Chemistry and **Markus G. Rudolph**

This book is a comprehensive text for undergraduate physical chemistry courses for biophysics, biochemistry, and the life sciences. It is rich in pedagogical features, containing boxes which provide additional background information on a specific topic, as well as those that provide numerous application examples. It describes a well-balanced spectrum of topics in a concise form, and bridges between theoretical concepts/methods and their applications to enable readers to directly transfer the treated topics to their laboratory projects.

CRC Press
Market: Physics
December 2017: 279 x 216: 792pp
Hb: 978-1-482-25223-1: **£84.99**
Pb: 978-0-367-57238-9: **£42.99**
eBook: 978-1-315-15691-0
* For **full contents** and more information, visit: **www.routledge.com/9781482252231**

TEXTBOOK • READER

Biophysical Chemistry



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June 2020: 279 x 216: 792pp
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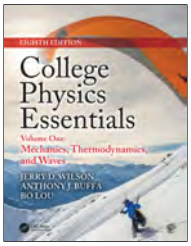
Pb: 978-0-367-57238-9: **£42.99**
eBook: 978-1-315-15691-0
* For **full contents** and more information, visit: **www.routledge.com/9780367572389**

TEXTBOOK • READER

College Physics Essentials, Eighth Edition

Mechanics, Thermodynamics, Waves (Volume One)



Jerry D. Wilson, Lander University, SC, USA, **Anthony J. Buffa**, California Polytechnic State University, CA, USA and **Bo Lou**, Ferris State University, MI, USA

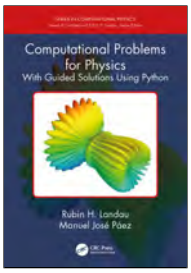
This edition provides a streamlined update of a major textbook for algebra-based physics, reflecting the demand by instructors for more substance. The authors enhance emphasis on worked examples to enhance reader engagement, together with expanded problem sets that build from conceptual understanding 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
Market: Physics
December 2019: 279 x 216: 406pp
Hb: 978-1-138-47632-5: **£74.99**
eBook: 978-0-429-32336-2
* For **full contents** and more information, visit: **www.routledge.com/9781138476325**

TEXTBOOK • READER

Computational Problems for Physics

With Guided Solutions Using Python



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

Series: Series in Computational Physics

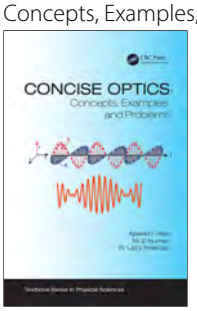
Our future scientists and professionals must be conversant in computational techniques. In order to facilitate integration of computer methods into existing physics courses, this textbook offers a large number of worked examples and problems with fully guided solutions in Python as well as other languages (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
Market: Physics
June 2018: 254 x 178: 408pp
Hb: 978-1-138-70591-3: **£94.99**
Pb: 978-1-138-70541-8: **£64.99**
eBook: 978-1-315-20209-9
* For **full contents** and more information, visit: **www.routledge.com/9781138705418**

TEXTBOOK • READER

Concise Optics

Concepts, Examples, and Problems



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

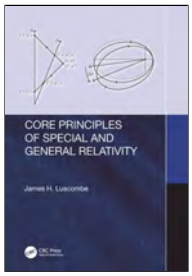
Series: Textbook Series in Physical Sciences

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 explains 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
Market: Physics / Electrical Engineering
March 2018: 235 x 156: 486pp
Hb: 978-1-138-10712-0: **£210.00**
Pb: 978-1-138-10702-1: **£84.99**
eBook: 978-1-315-10124-8
* For **full contents** and more information, visit: **www.routledge.com/9781138107021**

TEXTBOOK • READER

Core Principles of Special and General Relativity



James H. 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 is also contains the latest exciting developments in the field, including dark energy, gravitational waves, and frame dragging.

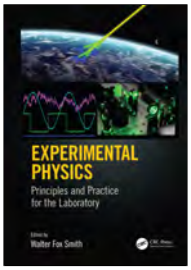
The table of contents has been carefully developed in consultation with a large number of instructors teaching courses worldwide, to ensure its wide applicability to modules on relativity and gravitation.

CRC Press
Market: Physics - MPA
December 2018: 254 x 178: 400pp
Hb: 978-1-138-54294-5: **£79.99**
eBook: 978-0-429-02383-5
* For **full contents** and more information, visit: **www.routledge.com/9781138542945**

TEXTBOOK • READER

Experimental Physics

Principles and Practice for the Laboratory



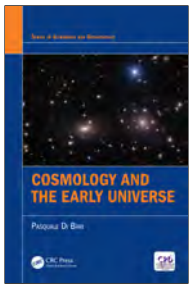
Edited by **Walter Fox Smith**

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
Market: Physics
April 2020: 254 x 178: 450pp
Hb: 978-1-498-77847-3: **£89.99**
eBook: 978-0-429-19489-4
* For **full contents** and more information, visit: **www.routledge.com/9781498778473**

TEXTBOOK • READER

Cosmology and the Early Universe



Pasquale Di Bari, University of Southampton, United Kingdom

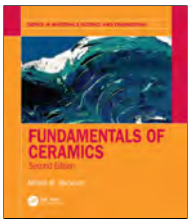
Series: Series in Astronomy and Astrophysics

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.

CRC Press
Market: Physics
May 2018: 254 x 178: 259pp
Hb: 978-1-498-76170-3: **£79.99**
Pb: 978-0-367-57170-2: **£42.99**
eBook: 978-1-498-76171-0
* For **full contents** and more information, visit: **www.routledge.com/9781498761703**

2nd Edition • TEXTBOOK

Fundamentals of Ceramics



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
Market: Materials Science
December 2019: 229 x 204: 648pp
Hb: 978-1-498-70813-5: **£74.99**
eBook: 978-1-498-70816-6
Prev. Ed Hb: 978-0-750-30902-8
* For **full contents** and more information, visit: **www.routledge.com/9781498708135**

TEXTBOOK • READER

Essentials of Soft Matter Science

Francoise Brochard-Wyart, Institut Curie, Paris, France, **Pierre Nassoy**, Institut d'Optique d'Aquitaine, Bordeaux, France and **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
Market: Physics
September 2019: 254 x 178: 290pp
Hb: 978-1-138-74276-5: **£180.00**
Pb: 978-1-498-77392-8: **£66.99**
eBook: 978-0-429-15435-5
* For **full contents** and more information, visit: **www.routledge.com/9781498773928**

2nd Edition • TEXTBOOK • READER

Fundamentals of Soft Matter Science

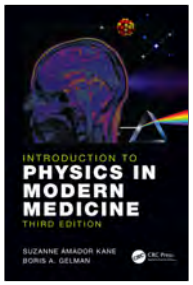
Linda S. Hirst, University of California, Merced, USA

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
Market: Physics
August 2019: 235 x 156: 304pp
Hb: 978-1-138-72478-5: **£190.00**
Pb: 978-1-138-72444-0: **£74.99**
eBook: 978-1-315-19238-3
Prev. Ed Pb: 978-1-439-82775-8
* For **full contents** and more information, visit: **www.routledge.com/9781138724440**

3rd Edition • TEXTBOOK

Introduction to Physics in Modern Medicine



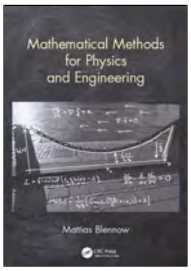
Suzanne Amador Kane, Haverford College, Pennsylvania, USA and **Boris A. Gelman**

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
Market: Physics
March 2020: 235 x 156: 450pp
Hb: 978-1-138-74263-5: **£150.00**
Pb: 978-1-138-03603-1: **£52.99**
eBook: 978-1-315-23208-9
Prev. Ed Pb: 978-1-584-88943-4
* For **full contents** and more information, visit: **www.routledge.com/9781138036031**

TEXTBOOK • READER

Mathematical Methods for Physics and Engineering



Mattias Blennow, KTH Royal Institute of Technology, Stockholm, Sweden

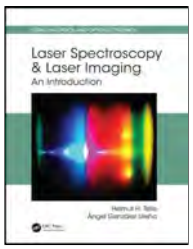
Suitable for advanced undergraduate and graduate students, this new textbook contains an introduction to the mathematical concepts used in physics and engineering. The entire book is unique in that it draws upon applications from physics, rather than mathematical examples, to ensure students are fully 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
Market: Physics
December 2017: 254 x 178: 760pp
Hb: 978-1-138-05690-9: **£220.00**
Pb: 978-1-138-05688-6: **£89.99**
eBook: 978-1-315-16509-7
* For **full contents** and more information, visit: **www.routledge.com/9781138056886**

TEXTBOOK • READER

Laser Spectroscopy and Laser Imaging

An Introduction



Helmut H. Telle, Universidad Complutense de Madrid, Spain and **Ángel González Ureña**, Universidad Complutense de Madrid, Spain

Series: Series in Optics and Optoelectronics

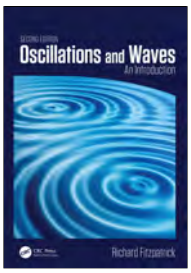
Developments in and applications of laser spectroscopy and laser imaging are growing rapidly, specifically now that spectral analytical methodologies are merging with laser imaging techniques. It is the intention of this book to provide researchers, both in industry and academia, with a concise collection 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
Market: Physics / Chemistry
May 2018: 254 x 203: 750pp
Hb: 978-1-466-58822-6: **£150.00**
Pb: 978-0-367-86821-5: **£64.99**
eBook: 978-1-315-15698-9
* For **full contents** and more information, visit: **www.routledge.com/9781466588226**

2nd Edition • TEXTBOOK • READER

Oscillations and Waves

An Introduction, Second Edition



Richard Fitzpatrick, The University of Texas, Austin, USA

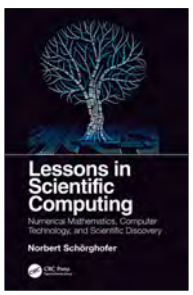
Emphasizing physics over mathematics, this popular, classroom-tested text helps advanced undergraduates acquire a sound physical understanding of wave phenomena. This second edition of Oscillations and Waves: An Introduction contains new widgets, animations in Python, and exercises, as well as updated 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.

CRC Press
Market: Physics
July 2018: 254 x 178: 309pp
Hb: 978-1-138-48035-3: **£180.00**
Pb: 978-1-138-47971-5: **£69.99**
eBook: 978-1-351-06310-4
Prev. Ed Pb: 978-1-466-56608-8
* For **full contents** and more information, visit: **www.routledge.com/9781138479715**

TEXTBOOK • READER

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
Market: Physics
October 2018: 235 x 156: 204pp
Hb: 978-1-138-07063-9: **£180.00**
Pb: 978-1-138-07058-5: **£56.99**
eBook: 978-1-315-10835-3
* For **full contents** and more information, visit: **www.routledge.com/9781138070585**

2nd Edition • TEXTBOOK • READER

Physics for Technology, Second Edition

Daniel H. Nichols, Matanuska-Susitna College, University of Alaska Anchorage, USA

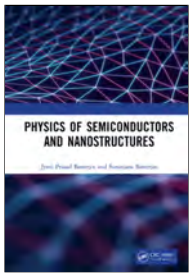
Series: Textbook Series in Physical Sciences

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
Market: Physics
December 2018: 229 x 204: 436pp
Hb: 978-0-815-38292-8: **£105.00**
eBook: 978-1-351-20727-0
* For **full contents** and more information, visit: **www.routledge.com/9780815382928**

TEXTBOOK • READER

Physics of Semiconductors and Nanostructures



Jyoti Prasad Banerjee, Institute of Radio Physics and Electronics, Universiy of Calcutta, Kolkata, West Bengal and **Suranjana Banerjee**, West Bengal University of Technology, Hooghly, India

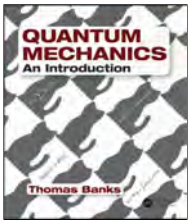
This book covers the physics of semiconductor materials, basic concepts of quantum mechanics and nanoelectronics, band theory of solids, and transport phenomena in semiconductors, along with the physics of low-dimensional quantum nanostructures, heterojunctions, and superlattices. It supplies a solid foundation for understanding the principles of operation and application of different types of microelectronic, optoelectronic, and quantum-effect devices based on semiconductor materials and nanostructures. Complete with exercises, the text is intended for junior- and senior-level undergraduate students of electrical and electronics engineering, physics, and materials science.

CRC Press
Market: Physics
June 2019: 254 x 178: 434pp
Hb: 978-1-482-22304-0: **£120.00**
eBook: 978-1-315-15680-4
* For **full contents** and more information, visit: **www.routledge.com/9781482223040**

TEXTBOOK • READER

Quantum Mechanics

An Introduction



Thomas Banks, Rutgers University, Piscataway, New Jersey, USA

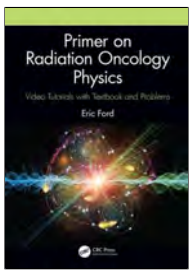
This new introductory textbook gives a complete, modern perspective on quantum mechanics as the basis of so much of physical sciences and today's electronic technologies. It clarifies for the first time many common misconceptions regarding wave/particle duality and the correct interpretation of mea¬surements. 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
Market: Physics
December 2018: 229 x 204: 568pp
Hb: 978-1-482-25506-5: **£94.99**
eBook: 978-0-429-43842-4
* For **full contents** and more information, visit: **www.routledge.com/9781482255065**

TEXTBOOK • READER

Primer on Radiation Oncology Physics

Video Tutorials with Textbook and Problems



Eric Ford, University of Washington Department of Radiation Oncology Box 356043 1959 NE Pacific Street Seattle, WA 98195

Gain mastery over the fundamentals of radiation oncology physics! This package gives you over 60 tutorial videos (each 15-20 minutes in length) with a companion text, providing the most complete and effective introduction available. Dr. Ford has tested this approach in formal instruction for years with outstanding results. The text includes extensive problem sets for each chapter with detailed solutions provided for instructors. The videos include embedded quizzes and 'whiteboard' screen technology to facilitate comprehension. Together, this provides a valuable learning tool both for training purposes and as a refresher for those in practice.

CRC Press
Market: Medical Physics
May 2020: 254 x 178: 374pp
Hb: 978-1-138-59438-8: **£190.00**
Pb: 978-1-138-59170-7: **£74.99**
eBook: 978-0-429-48888-7
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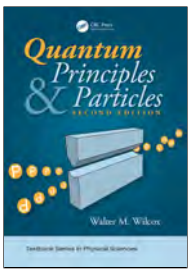
2nd Edition • TEXTBOOK • READER

Quantum Principles and Particles, Second Edition



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
Market: Physics
August 2019: 254 x 178: 600pp
Hb: 978-1-138-09041-5: **£140.00**
Pb: 978-1-138-09037-8: **£89.99**
eBook: 978-1-138-09043-9
Prev. Ed Pb: 978-1-439-83525-8
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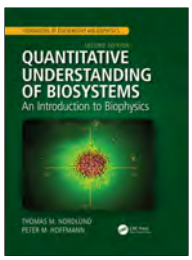
2nd Edition • TEXTBOOK • READER

Quantitative Understanding of Biosystems

An Introduction to Biophysics, Second Edition



Thomas M. Nordlund, University of Alabama at Birmingham and **Peter M. Hoffmann**, Wayne State University

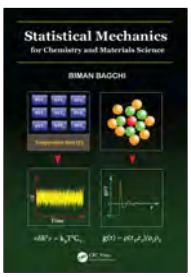
Series: Foundations of Biochemistry and Biophysics

This new edition provides a complete update to the most accessible yet thorough introduction to the physical and quantitative aspects of biological systems and processes involving macromolecules, subcellular structures, and whole cells. It includes two brand new chapters covering experimental techniques, especially atomic force microscopy, complementing the updated coverage of mathematical and computational tools. The authors have also incorporated additions to the multimedia component of video clips and animations, as well as interactive diagrams and graphs.

CRC Press
Market: Physics
April 2019: 279 x 216: 632pp
Hb: 978-1-138-63341-4: **£120.00**
eBook: 978-1-315-20760-5
Prev. Ed Hb: 978-1-420-08972-1
* For **full contents** and more information, visit: **www.routledge.com/9781138633414**

TEXTBOOK • READER

Statistical Mechanics for Chemistry and Materials Science



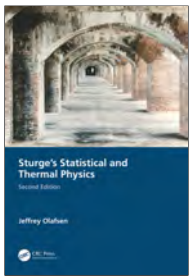
Biman Bagchi, Indian Institute of Science, Bangalore, India

This book covers the broad subject of equilibrium statistical mechanics along with many advanced and modern topics such as nucleation, spinodal decomposition, inherent structures of liquids and liquid crystals. Unlike other books on the market, this comprehensive text not only deals with the primary fundamental ideas of statistical mechanics but also covers contemporary topics in this broad and rapidly developing area of chemistry and materials science.

CRC Press
Market: Physics
July 2018: 254 x 178: 580pp
Hb: 978-1-482-29986-1: **£120.00**
eBook: 978-1-315-11395-1
* For **full contents** and more information, visit: **www.routledge.com/9781482299861**

2nd Edition • TEXTBOOK • READER

Sturge's Statistical and Thermal Physics, Second Edition



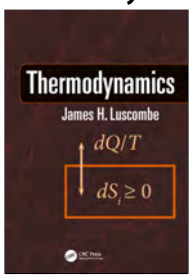
Jeffrey Olafsen

This fully revised and updated edition provides a uniquely accessible introduction to the principles and applications of statistical mechanics and thermodynamics. Based on the highly acclaimed text by famous physicist M.D. Sturge, it continues its emphasis on explaining concepts with simple mathematics and plain English, as well as consistent use of terminology and notation. The new edition includes a chapter on non-equilibrium thermodynamics and many new examples from soft condensed matter physics. Additionally, chapters have been reorganized for better flow.

CRC Press
Market: Physics
July 2019: 254 x 178: 422pp
Hb: 978-1-482-25600-0: **£89.99**
eBook: 978-1-482-25601-7
* For **full contents** and more information, visit: **www.routledge.com/9781482256000**

TEXTBOOK • READER

Thermodynamics



James Luscombe

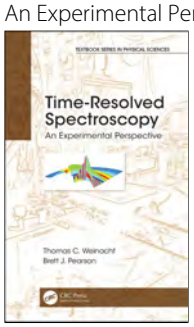
This book provides an accessible yet thorough introduction to thermodynamics, crafted and class-tested over many years of teaching. Suitable for advanced undergraduate and graduate students, this book delivers clear descriptions of how to think about the mathematics and physics involved. The content has been carefully developed in consultation with a large number of instructors teaching courses worldwide, to ensure wide applicability to modules on thermodynamics. Modern applications of thermodynamics (in physics and related areas) are included throughout—something not offered to the same degree by existing texts in the field.

CRC Press
Market: Physics
March 2018: 254 x 178: 240pp
Hb: 978-1-138-54298-3: **£79.99**
Pb: 978-0-367-57199-3: **£42.99**
eBook: 978-0-429-50762-5
* For **full contents** and more information, visit: **www.routledge.com/9781138542983**

TEXTBOOK • READER

Time-Resolved Spectroscopy

An Experimental Perspective



Thomas Weinacht, Stony Brook University, New York, USA and **Brett J. Pearson**, Dickinson College, Carlisle, Pennsylvania, USA

Series: Textbook Series in Physical Sciences

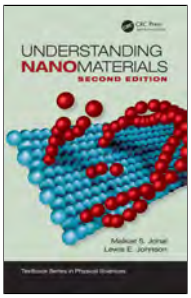
This concise and carefully developed text offers a reader friendly guide to the basics of time-resolved spectroscopy with an emphasis on experimental implementation. The authors carefully explain and relate for the reader how measurements are connected to the core physical principles. They use the time-dependent wave packet as a building block for understanding quantum dynamics, progressively advancing to more complex topics. The topics are discussed in paired sections, one discussing the theory and the next presenting the related experimental methods.

A wide range of readers including students and newcomers to the field will gain a clear and practical understanding of how to measure aspects of molecular dynamics such as wave packet motion, intramolecular vibrational relaxation, and electron-electron coupling, and how to describe such measurements mathematically.

CRC Press
Market: Physics
January 2019: 254 x 203: 370pp
Hb: 978-1-498-71673-4: **£110.00**
eBook: 978-1-498-71674-1
* For **full contents** and more information, visit: **www.routledge.com/9781498716734**

2nd Edition • TEXTBOOK • READER

Understanding Nanomaterials



Malkiat S. Johal, Pomona College, CA, USA and **Lewis E. Johnson**, North Carolina State University, 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: 229 x 204: 528pp
Hb: 978-0-815-35438-3: **£130.00**
Pb: 978-1-482-25322-1: **£74.99**
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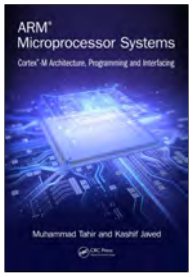
TEXTBOOK • READER

ARM Microprocessor Systems

Cortex-M Architecture, Programming, and Interfacing



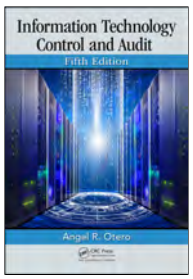
Muhammad Tahir and **Kashif Javed**

This book presents the use of a microprocessor-based digital system in our daily life. Its bottom-up approach ensures that all the basic building blocks are covered before the development of a real-life system. The ultimate goal of the book is to equip students with all the fundamental building blocks as well as their integration, allowing them to implement the applications they have dreamed up with minimum effort.

CRC Press
June 2020: 254x178: 514pp
Hb: 978-1-482-25938-4: **£84.99**
Pb: 978-0-367-57391-1: **£42.99**
eBook: 978-1-315-16151-8
* For **full contents** and more information, visit: **www.routledge.com/9780367573911**

5th Edition • TEXTBOOK • READER

Information Technology Control and Audit, Fifth Edition



Angel R. Otero, Florida Institute of Technology, Melbourne, USA

The new fifth edition of Information Technology Control and Audit provides a comprehensive and up-to-date overview of IT governance, controls, auditing applications, systems development, and operations. Aligned to and supporting the Control Objectives for Information and Related Technology (COBIT), it examines emerging trends and defines recent advances in technology that impact IT controls and audits. Filled with exercises, review questions, section summaries, and references for further reading, this updated and revised edition promotes the mastery of the concepts and practical implementation of controls needed to manage information technology resources effectively well into the future.

Auerbach Publications
Market: Information Technology
August 2018: 254 x 178: 510pp
Hb: 978-1-498-75228-2: **£69.99**
Pb: 978-0-367-65715-4: **£42.99**
eBook: 978-0-429-46500-0
Prev. Ed Hb: 978-1-439-89320-3
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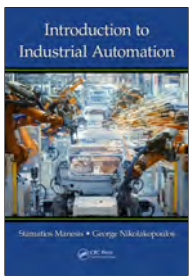
TEXTBOOK • READER

Introduction to Industrial Automation



Stamatios Manesis and **George Nikolakopoulos**

This book provides an extended overview and fundamental knowledge in industrial automation, while building the necessary knowledge level for further specialization in advanced concepts of industrial automation. It covers a number of central concepts of industrial automation, such as basic automation elements, hardware components for automation and process control, the latch principle, industrial automation synthesis, logical design for automation, electropneumatic automation, industrial networks, basic programming in PLC, and PID in the industry.

CRC Press
Market: Engineering - Industrial & Manufacturing
April 2018: 254 x 178: 457pp
Hb: 978-1-498-70540-0: **£110.00**
Pb: 978-0-367-57183-2: **£42.99**
eBook: 978-1-498-70541-7
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TEXTBOOK • READER

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1000+ Practice Exam Questions for the PgMP® Examination

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Up to date with the fourth edition of PMI's Program Management Standard, *PgMP® Practice Test Questions: 1000+ Practice Exam Questions for the PgMP® Examination* contains more than 1,000 practice questions to help readers hone their knowledge and test their skills. It covers all five of the program management domains: Strategic Program Management, Program Management Life Cycle, Benefits Management, Stakeholder Management, and Governance. It also examines all of the sub domains of the lifecycle domain. With an easy-to-use format, this is an ideal resource for those preparing to take the PgMP® exam.

Auerbach Publications
July 2018: 254 x 178: 302pp
Pb: 978-0-367-00113-1: **£42.99**
eBook: 978-0-429-43757-1
* For **full contents** and more information, visit: **www.routledge.com/9780367001131**

TEXTBOOK • READER

Advanced Regression Models with SAS and R

Olga Korosteleva, California State University, Long Beach, USA

The material covered by this book consists of a collection of regression models beyond linear regression. The linear regression model is presented in the first chapter in order to refresh the reader's memory, emphasize certain points, and set the notation.The subsequent chapters talk about models for categorical data, count data, proportions, longitudinal data, hierarchical data, and others.

Chapman and Hall/CRC
Market: Statistics
December 2018: 254 x 178: 324pp
Hb: 978-1-138-04901-7: **£79.99**
Pb: 978-0-367-73242-4: **£42.99**
eBook: 978-1-315-16982-8
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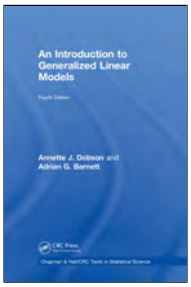
4th Edition • TEXTBOOK

An Introduction to Generalized Linear Models



Annette J. Dobson, University of Queensland, Herston, Australia and **Adrian G. Barnett**, Queensland University of Technology, Kelvin Grove, Australia

Series: Chapman & Hall/CRC Texts in Statistical Science

This book provides a cohesive framework for statistical modelling, with an emphasis on numerical and graphical methods. This new edition of a bestseller has been updated with new sections on non-linear associations, strategies for model selection, and a Postface on good statistical practice.

Like its predecessor, it presents the theoretical background of generalized linear models (GLMs) before focusing on methods for analyzing particular kinds of data. It covers Normal, Poisson, and Binomial distributions; linear regression models; classical estimation and model fitting methods; and frequentist methods of statistical inference. After forming this foundation, the authors explore multiple linear regression, analysis of variance (ANOVA), logistic regression, log-linear models, survival analysis, multilevel modeling, Bayesian models, and Markov chain Monte Carlo (MCMC) methods.

Chapman and Hall/CRC
Market: Statistics
April 2018: 235 x 156: 392pp
Hb: 978-1-138-74168-3: **£130.00**
Pb: 978-1-138-74151-5: **£64.99**
eBook: 978-1-315-18278-0
Prev. Ed Hb: 978-1-584-88950-2
* For **full contents** and more information, visit: **www.routledge.com/9781138741683**

TEXTBOOK • READER

Algorithmic Trading and Quantitative Strategies

Raja Velu, **Maxence Hardy** and **Daniel Nehren**

This book brings together the literature in main stream finance and the tools presented in quantitative finance with a focus on what is being practiced in industry. The author begins with the economic theory behind price formation and tests the model that results from the theory and suggests algorithms to detect and exploit the anomalies. The book provides a comprehensive description of the methodologies both published and unpublished, but being practiced. The strength of the book is the intuitive approach to developing algorithms – based on statistical techniques, machine learning ideas, and optimization methods.

Chapman and Hall/CRC
Market: Mathematics
August 2020: 235 x 156: 450pp
Hb: 978-1-498-73716-6: **£89.99**
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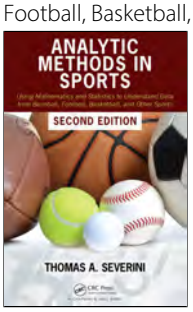
2nd Edition • TEXTBOOK • READER

Analytic Methods in Sports

Using Mathematics and Statistics to Understand Data from Baseball, Football, Basketball, and Other Sports



Thomas A. Severini, Northwestern University, USA

Analytic Methods in Sports: Using Mathematics and Statistics to Understand Data from Baseball, Football, Basketball, and Other Sports, 2nd Edition provides a concise yet thorough introduction to the analytic and statistical methods that are useful in studying sports. It explains how to apply the methods to sports data and interpret the results, demonstrating that the analysis of sports data is often different from standard statistical analyses. The book integrates a large number of motivating sports examples throughout and offers guidance on computation and suggestions for further reading in each chapter.

Chapman and Hall/CRC
Market: Statistics
March 2020: 235 x 156: 372pp
Hb: 978-0-367-25207-6: **£140.00**
Pb: 978-0-367-46938-2: **£52.99**
eBook: 978-0-367-25209-0
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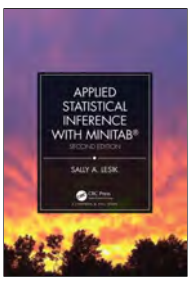
2nd Edition • TEXTBOOK • READER

Applied Statistical Inference with MINITAB®, Second Edition



Sally A. Lesik, Central Connecticut State University, New Britain, USA

This book covers material that is typically presented in an intermediate course in statistics at the undergraduate level and a first course in applied statistics at the graduate level. Topics include basic statistical inference, regression, and ANOVA. More advanced topics include non-parametric statistics, logistic regression, and goodness-of-fit tests. One key feature of this book is that it is written to provide readers with the foundation necessary to study more advanced topics in statistics.

Chapman and Hall/CRC
January 2019: 254 x 178: 496pp
Hb: 978-1-498-77998-2: **£110.00**
eBook: 978-0-429-44495-1
Prev. Ed Hb: 978-1-420-06583-1
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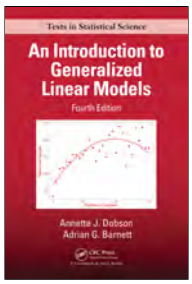
4th Edition • TEXTBOOK

An Introduction to Generalized Linear Models



Annette J. Dobson, University of Queensland, Herston, Australia and **Adrian G. Barnett**, Queensland University of Technology, Kelvin Grove, Australia

Series: Chapman & Hall/CRC Texts in Statistical Science

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Like its predecessor, it presents the theoretical background of generalized linear models (GLMs) before focusing on methods for analyzing particular kinds of data. It covers Normal, Poisson, and Binomial distributions; linear regression models; classical estimation and model fitting methods; and frequentist methods of statistical inference. After forming this foundation, the authors explore multiple linear regression, analysis of variance (ANOVA), logistic regression, log-linear models, survival analysis, multilevel modeling, Bayesian models, and Markov chain Monte Carlo (MCMC) methods.

Chapman and Hall/CRC
Market: Statistics
April 2018: 235 x 156: 392pp
Hb: 978-1-138-74168-3: **£130.00**
Pb: 978-1-138-74151-5: **£64.99**
eBook: 978-1-315-18278-0
Prev. Ed Pb: 978-1-439-88919-0
* For **full contents** and more information, visit: **www.routledge.com/9781138741515**

TEXTBOOK • READER

Computer Intensive Methods in Statistics

Silvelyn Zwanzig, Uppsala University, Sweden and **Behrang Mahjani**, Uppsala University, Sweden

This textbook gives an overview of statistical methods that have been developed during the last years due to increasing computer use, including random number generators, Monte Carlo methods, Markov Chain Monte Carlo (MCMC) methods, Bootstrap, EM algorithms, SIMEX, variable selection, density estimators, kernel estimators, orthogonal and local polynomial estimators, wavelet estimators, splines, and model assessment. *Computer Intensive Methods in Statistics* is written for students at graduate level, but can also be used by practitioners.

Chapman and Hall/CRC
Market: Statistics
December 2019: 235 x 156: 436pp
Hb: 978-0-367-19425-3: **£130.00**
Pb: 978-0-367-19423-9: **£48.99**
eBook: 978-0-429-20232-2
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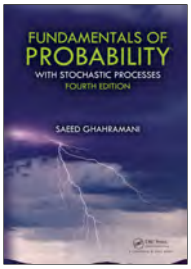
4th Edition • TEXTBOOK

Fundamentals of Probability

With Stochastic Processes



Saeed Ghahramani, Western New England University, Springfield, Massachusetts, USA

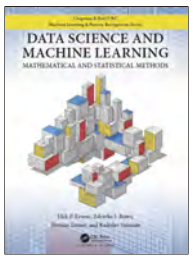
The book covers all topics that are used in a calculus-based junior-senior probability course plus some additional material. With the extensive chapters in Stochastic Processes, it can also be used as a text for a second course in probability. The historical roots and applications of many of the theorems and definitions are presented in detail, accompanied by suitable examples or counterexamples.

Chapman and Hall/CRC
Market: Statistics
September 2018: 254 x 178: 652pp
Hb: 978-1-498-75509-2: **£99.99**
eBook: 978-0-429-45795-1
Prev. Ed Hb: 978-1-498-75501-6
* For **full contents** and more information, visit: **www.routledge.com/9781498755092**

TEXTBOOK • READER

Data Science and Machine Learning

Mathematical and Statistical Methods



Dirk P. Kroese, **Zdravko Botev**, University of New South Wales, **Thomas Taimre** and **Radislav Vaisman**

Series: Chapman & Hall/CRC Machine Learning & Pattern Recognition

The purpose of this book is to provide an accessible, comprehensive textbook in data science and machine learning. The book will provide a solid basis in linear algebra, optimization, probability, and statistics. The main body will discuss the major topics in machine learning and data science: data manipulation, supervised and unsupervised learning, modelling of data, linear models, regression, classification, principal component analysis, deep learning, high dimensional data, regularization, kernel methods, support vector machines, etc.

Chapman and Hall/CRC
Market: Statistics
November 2019: 279 x 216: 532pp
Hb: 978-1-138-49253-0: **£74.99**
eBook: 978-0-367-81697-1
* For **full contents** and more information, visit: **www.routledge.com/9781138492530**

TEXTBOOK • READER

Geocomputation with R

Robin Lovelace, University of Leeds, UK, **Jakub Nowosad**, Adam Mickiewicz University Poznan, Poland and **Jannes Muenchow**, Friedrich Schiller University, Jena, Germany

Series: Chapman & Hall/CRC The R Series

This book presents a vision for an introductory and accessible textbook on geographic data analysis, modelling, and visualisation with R. The discipline of Geography captures each of these things, as well as content to get R beginners up-to-speed with R in general.

Chapman and Hall/CRC
Market: Statistics
March 2019: 235 x 156: 353pp
Hb: 978-1-138-30451-2: **£66.99**
Pb: 978-0-367-67057-3: **£42.99**
eBook: 978-0-203-73005-8
* For **full contents** and more information, visit: **www.routledge.com/9781138304512**

TEXTBOOK • READER

Derivative Pricing

A Problem-Based Primer

Ambrose Lo

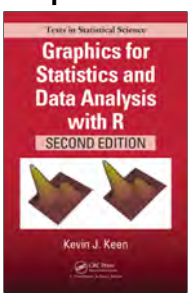
Series: Chapman and Hall/CRC Financial Mathematics Series

The proliferation of financial derivatives over the past few decades, options in particular, has underscored the increasing importance of derivative pricing literacy. This textbook adopts a mathematically rigorous yet widely accessible pedagogical approach, providing a formal treatment of derivative pricing methodologies and their underlying theory. The abundance of examples and problems makes the book particularly suitable for advanced undergraduates, beginning graduates as well as professionals who need a fundamental understanding of how and, more importantly, why derivative pricing works.

Chapman and Hall/CRC
Market: Statistics
June 2018: 254 x 178: 450pp
Hb: 978-1-138-03335-1: **£79.99**
Pb: 978-0-367-73421-3: **£42.99**
eBook: 978-1-315-30123-5
* For **full contents** and more information, visit: **www.routledge.com/9781138033351**

2nd Edition • TEXTBOOK • READER

Graphics for Statistics and Data Analysis with R



Kevin J. Keen, University of Northern British Columbia, Prince George, Canada

Series: Chapman & Hall/CRC Texts in Statistical Science

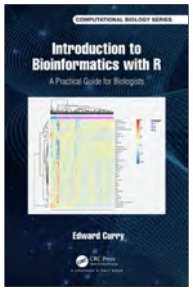
The book presents the basic principles of sound graphical design and applies these principles to engaging examples using the graphical functions available in R. It offers a wide variety of graphical displays for the presentation of data, including modern tools for data visualization and representation. The second edition will add examples with the R package ggplot2 in addition to examples with the base and lattice packages in the first edition.

Chapman and Hall/CRC
May 2018: 235 x 156: 610pp
Hb: 978-1-498-77983-8: **£69.99**
Pb: 978-0-367-73444-2: **£42.99**
eBook: 978-0-429-03106-9
Prev. Ed Hb: 978-1-584-88087-5
* For **full contents** and more information, visit: **www.routledge.com/9781498779838**

TEXTBOOK • READER

Introduction to Bioinformatics with R

A Practical Guide for Biologists



Edward Curry, Imperial Collenge, London

Series: Chapman & Hall/CRC Computational Biology Series

This book has been developed over years of training biological scientists and clinicians to analyse the large datasets available in their cancer research projects. Through the entire book, theoretical explanations are presented alongside step-by-step instructions for carrying out a number of widely-applicable data analysis tasks using freely available software. This book guides the reader through the basic principles of exploratory analysis and hypothesis testing in high-dimensional datasets, and the practicalities of installing statistical computing software and using this to handle different types of data tables.

Chapman and Hall/CRC
Market: Statistics
November 2020: 235 x 156: 310pp
Hb: 978-1-138-49895-2: **£130.00**
Pb: 978-1-138-49571-5: **£49.99**
eBook: 978-1-351-01531-8
* For **full contents** and more information, visit: **www.routledge.com/9781138495715**

TEXTBOOK • READER

Introduction to Data Science

Data Analysis and Prediction Algorithms with R

Rafael A. Irizarry

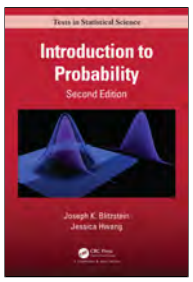
Series: Chapman & Hall/CRC Data Science Series

The book begins by going over the basics of R and the tidyverse. You learn R throughout the book, but in the first part we go over the building blocks needed to keep learning during the rest of the book.

Chapman and Hall/CRC
Market: Statistics
November 2019: 254 x 178: 743pp
Hb: 978-0-367-35798-6: **£74.99**
eBook: 978-0-429-34183-0
* For **full contents** and more information, visit: **www.routledge.com/9780367357986**

2nd Edition • TEXTBOOK

Introduction to Probability, Second Edition



Joseph K. Blitzstein, Harvard University, Cambridge, Massachusetts, USA and **Jessica Hwang**, Stanford University, California, USA

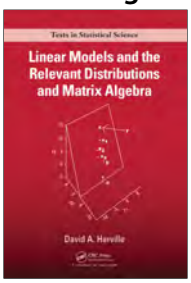
Series: Chapman & Hall/CRC Texts in Statistical Science

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 and Hall/CRC
Market: Statistics
February 2019: 254 x 178: 634pp
Hb: 978-1-138-36991-7: **£59.95**
eBook: 978-0-429-42835-7
* For **full contents** and more information, visit: **www.routledge.com/9781138369917**

TEXTBOOK • READER

Linear Models and the Relevant Distributions and Matrix Algebra



David A. Harville, Iowa State (Emeritus)

Series: Chapman & Hall/CRC Texts in Statistical Science

The book describes the use of linear statistical models as a basis for statistical inference and the theoretical underpinnings of the resultant inferential procedures. It covers the relevant distributions and matrix algebra that is relatively complete and self-contained. Derivations or proofs are provided for almost all results; some of these are are not readily available from other sources. The book includes coverage of some topics that are typically covered less extensively or not covered at all in other books on linear models; among these topics are prediction, multiple-comparison procedures for controlling the FDR, and spherical/elliptical distributions.

Chapman and Hall/CRC
Market: Statistics
March 2018: 254 x 178: 538pp
Hb: 978-1-138-57833-3: **£120.00**
Pb: 978-0-367-57203-7: **£42.99**
eBook: 978-1-351-26468-6
* For **full contents** and more information, visit: **www.routledge.com/9781138578333**

2nd Edition • TEXTBOOK • READER

Multivariate Analysis for the Behavioral Sciences, Second Edition

Kimmo Vehkalahti and **Brian S. Everitt**, King's College, University of London, England, UK

Series: Chapman & Hall/CRC Statistics in the Social and Behavioral Sciences

Multivariate Analysis for the Behavioral Sciences, Second Edition is designed to show how a variety of statistical methods can be used to analyse data collected by psychologists and other behavioral scientists. Assuming some familiarity with introductory statistics, the book begins by briefly describing a variety of study designs used in the behavioral sciences, and the concept of models for data analysis. The contentious issues of p-values and confidence intervals are also discussed in the introductory chapter.

CRC Press
Market: Statistics
January 2019: 235 x 156: 437pp
Hb: 978-0-815-38515-8: **£69.99**
Pb: 978-0-367-65675-1: **£42.99**
eBook: 978-1-351-20227-5
Prev. Ed Hb: 978-1-439-80769-9
* For **full contents** and more information, visit: **www.routledge.com/9780815385158**

6th Edition • TEXTBOOK

Practical Multivariate Analysis

Abdelmonem Afifi, University of California, Los Angeles, USA, **Susanne May**, University of Washington, Seattle, USA, **Robin Donatello**, UCLA and **Virginia A. Clark**, Consultant, Sequim, Washington, USA

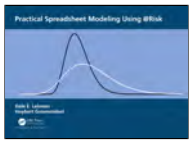
Series: Chapman & Hall/CRC Texts in Statistical Science

This is the sixth edition of a popular textbook on multivariate analysis. Well-regarded for its practical and accessible approach, with excellent examples and good guidance on computing, the book is particularly popular for teaching outside statistics, i.e. in epidemiology, social science, business, etc. The sixth edition has been updated with a new chapter on data visualization, and many new updates and references throughout. This new edition will enable the book to continue as one of the leading textbooks in the area, particularly for non-statisticians.

Chapman and Hall/CRC
Market: Statistics
October 2019: 254 x 178: 434pp
Hb: 978-1-138-70222-6: **£74.99**
eBook: 978-1-315-20373-7
Prev. Ed Hb: 978-1-439-81680-6
* For **full contents** and more information, visit: **www.routledge.com/9781138702226**

TEXTBOOK • READER

Practical Spreadsheet Modeling Using @Risk



Dale Lehman, Loras College, Dubuque, IA and **Huybert Groenendaal**, EpiX Analytics, Boulder, Colorado, USA

This book is written for anyone interested in conducting applied risk analysis in business, engineering, environmental planning, public policy, medicine, or virtually any field amenable to spreadsheet modeling. The authors provide practical case studies along with detailed instruction and illustration of the features of @Risk, the most advanced risk modeling spreadsheet software currently available. If you intend to use spreadsheets for decision-supporting analysis, rather than merely as placeholders for numbers, then this is the resource for you.

Chapman and Hall/CRC
Market: Statistics
December 2019: 178 x 254: 242pp
Hb: 978-0-367-17386-9: **£89.99**
eBook: 978-0-429-05644-4
* For **full contents** and more information, visit: **www.routledge.com/9780367173869**

3rd Edition • TEXTBOOK

Probability and Statistics for Computer Scientists

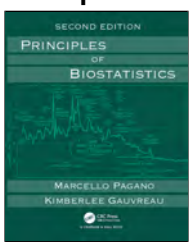
Michael Baron, American University, Washington, DC

Presenting probability and statistical methods, simulation techniques, and modeling tools, this textbook helps students solve problems and make optimal decisions in uncertain conditions, select stochastic models, compute probabilities and forecasts, and evaluate performance of computer systems and networks. This third edition adds coverage of R including code for data analysis examples in the book.

Chapman and Hall/CRC
Market: Statistics
June 2019: 254 x 178: 506pp
Hb: 978-1-138-04448-7: **£89.99**
eBook: 978-1-315-17228-6
* For **full contents** and more information, visit: **www.routledge.com/9781138044487**

2nd Edition • TEXTBOOK • READER

Principles of Biostatistics



Marcello Pagano, Harvard T.H. Chan School of Public Health and **Kimberlee Gauvreau**, Harvard T.H. Chan School of Public Health

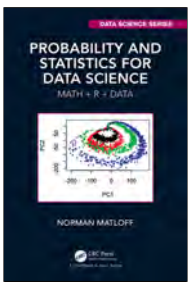
Principles of Biostatistics Second Edition is a concepts-based introduction to statistical procedures that prepares public health, medical, and life sciences students to conduct and evaluate research. With an engaging writing style and helpful graphics, the emphasis is on concepts over formulas or rote memorization. Throughout the book, the authors use practical, interesting examples with real data to bring the material to life. This is a reprint of the 2000 Cengage edition.

Chapman and Hall/CRC
Market: Statistics
February 2018: 235 x 187: 584pp
Hb: 978-1-138-59314-5: **£84.99**
eBook: 978-0-429-48962-4
* For **full contents** and more information, visit: **www.routledge.com/9781138593145**

TEXTBOOK • READER

Probability and Statistics for Data Science

Math + R + Data



Norman Matloff, Dept. of Computer Science, Univ. of California, Davis

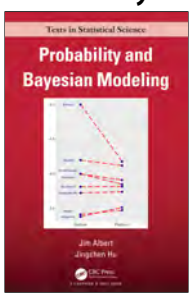
Series: Chapman & Hall/CRC Data Science Series

This text is designed for a one-semester junior/senior/graduate-level calculus-based course on probability and statistics, aimed specifically at data science students (including computer science). In addition to calculus, the text assumes basic knowledge of matrix algebra and rudimentary computer programming. The key difference is the consistently applied approach, pervasive throughout the book. The overriding goal is to stay mathematically precise, yet emphasize intuition, modeling and applications.

Chapman and Hall/CRC
Market: Statistics
June 2019: 235 x 156: 444pp
Hb: 978-0-367-26093-4: **£140.00**
Pb: 978-1-138-39329-5: **£52.99**
eBook: 978-0-429-40186-2
* For **full contents** and more information, visit: **www.routledge.com/9781138393295**

TEXTBOOK • READER

Probability and Bayesian Modeling



Jim Albert and **Jingchen Hu**

Series: Chapman & Hall/CRC Texts in Statistical Science

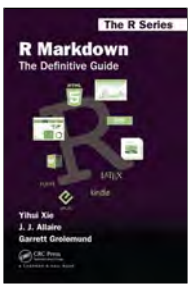
Bayesian statistics has been advancing in all aspects (theoretically, methodologically and computationally) in recent years. Based on an intuitive interpretation and understanding of probability, Bayesian learning provides a natural framework for students to think and solve scientific problems. This book provides an introduction to Bayesian analysis for undergraduate students with calculus , statistics and computational background.

Chapman and Hall/CRC
Market: Statistics
December 2019: 235 x 156: 552pp
Hb: 978-1-138-49256-1: **£74.99**
eBook: 978-1-351-03014-4
* For **full contents** and more information, visit: **www.routledge.com/9781138492561**

TEXTBOOK • READER

R Markdown

The Definitive Guide



Yihui Xie, RStudio, Inc. Boston, MA, USA, **J.J. Allaire**, RStudio and **Garrett Grolemund**

Series: Chapman & Hall/CRC The R Series

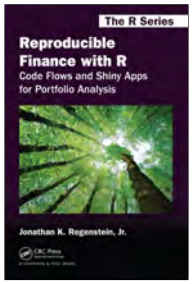
The rmarkdown package has steadily evolved into a relatively complete ecosystem for authoring documents. This book provides a definitive guide to this ecosystem. There are a large number of tasks that you could do with R Markdown: compile a single R Markdown document to a report in different formats, such as PDF, HTML, or Word; create notebooks in which you can directly run code chunks interactively; make slides for presentations (HTML5 or LaTeX Beamer); produce dashboards with flexible, interactive, and attractive layouts; build interactive applications based on Shiny; write journal articles; author books of multiple chapters; generate websites and blogs.

Chapman and Hall/CRC
Market: Statistics
July 2018: 235 x 156: 304pp
Hb: 978-1-138-35942-0: **£69.99**
Pb: 978-1-138-35933-8: **£28.99**
eBook: 978-1-138-35944-4
* For **full contents** and more information, visit: **www.routledge.com/9781138359338**

TEXTBOOK • READER

Reproducible Finance with R

Code Flows and Shiny Apps for Portfolio Analysis



Jonathan K. Regenstein, Jr., RStudio

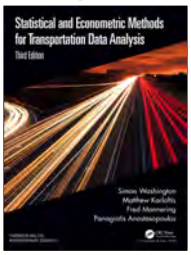
Series: Chapman & Hall/CRC The R Series

The intended audience is leaders at financial institutions who want to build data science practices, analysts at financial institutions who want to work on data science teams, students/aspiring professionals who want work in finance and anyone who has foreseen that Excel skills are not enough to be competitive in finance. In more detail: students, mid-career professionals, hedge fund analysts, banking analysts, MBA students, CFA candidates, CFA charterholders, R coders who want to work in finance.

Chapman and Hall/CRC
Market: Statistics
October 2018: 235 x 156: 248pp
Hb: 978-1-138-48422-1: **£150.00**
Pb: 978-1-138-48403-0: **£56.99**
eBook: 978-1-351-05262-7
* For **full contents** and more information, visit: **www.routledge.com/9781138484030**

3rd Edition • TEXTBOOK • READER

Statistical and Econometric Methods for Transportation Data Analysis



Simon Washington, **Matthew G. Karlaftis**, National Technical University of Athens, Greece, **Fred Mannering**, University of South Florida 4202 E. Fowler Ave. Tampa, FL 33620 and **Panagiotis Anastasopoulos**

Series: Chapman & Hall/CRC Interdisciplinary Statistics

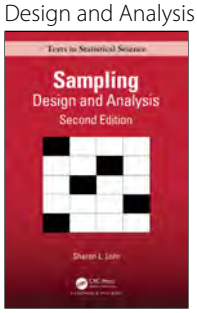
The complexity, diversity, and random nature of transportation problems necessitates a broad analytical toolbox. Describing tools commonly used in the field, Statistical and Econometric Methods for Transportation Data Analysis, Third Edition provides an understanding of a broad range of analytical tools required to solve transportation problems. It includes a wide breadth of examples and case studies covering applications in various aspects of transportation planning, engineering, safety, and economics.

Chapman and Hall/CRC
Market: Statistics
February 2020: 254 x 178: 496pp
Hb: 978-0-367-19902-9: **£89.99**
eBook: 978-0-429-24401-8
Prev. Ed Hb: 978-1-420-08285-2
* For **full contents** and more information, visit: **www.routledge.com/9780367199029**

2nd Edition • TEXTBOOK • READER

Sampling

Design and Analysis



Sharon L. Lohr

Series: Chapman & Hall/CRC Texts in Statistical Science

This authoritative text, used as a standard reference by numerous survey organizations, teaches sampling using real data sets from social sciences, public opinion research, medicine, public health. Can be used for a graduate class for statistics students a class with students from business, sociology, psychology, or biology. Readers should be familiar with concepts from an introductory statistics class including linear regression; optional sections contain the statistical theory, for readers who have studied mathematical statistics.

Chapman and Hall/CRC
Market: Statistics
April 2019: 235 x 187: 610pp
Hb: 978-0-367-27346-0: **£120.00**
Pb: 978-0-367-27341-5: **£44.99**
eBook: 978-0-429-29628-4
* For **full contents** and more information, visit: **www.routledge.com/9780367273415**

2nd Edition • TEXTBOOK • READER

Statistical Computing with R, Second Edition

Maria L. Rizzo, Bowling Green State University, Ohio, USA

Series: Chapman & Hall/CRC The R Series

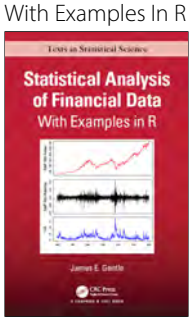
Computational statistics and statistical computing are two areas that employ computational, graphical, and numerical approaches to solve statistical problems, making the versatile R language an ideal computing environment for these fields. This second edition continues to encompass the traditional core material of computational statistics, with an emphasis on using the R language via an examples-based approach. It includes R code for all examples and R notes to help explain the R programming concepts. This edition also features a new chapter on nonparametric regression and smoothing.

Chapman and Hall/CRC
Market: Statistics
March 2019: 235 x 156: 490pp
Hb: 978-1-466-55332-3: **£59.99**
eBook: 978-0-429-19276-0
Prev. Ed Hb: 978-1-584-88545-0
* For **full contents** and more information, visit: **www.routledge.com/9781466553323**

TEXTBOOK • READER

Statistical Analysis of Financial Data

With Examples In R



James Gentle, George Mason University

Series: Chapman & Hall/CRC Texts in Statistical Science

The book is about financial data, in particular, security prices and prices of derivatives, and the statistical methods for analyzing such data. It covers statistical models of branching processes, linear discrete time series models, and continuous-time stochastic models, all at an intermediate level (advanced undergraduate, or beginning graduate).). The book provides a brief introduction to R and uses R extensively to get and analyze data. Actual financial datasets are discussed and analyzed.

CRC Press
Market: Statistics
March 2020: 235 x 156: 666pp
Hb: 978-1-138-59949-9: **£89.99**
eBook: 978-0-429-48560-2
* For **full contents** and more information, visit: **www.routledge.com/9781138599499**

TEXTBOOK • READER

Statistical Foundations of Data Science

Jianqing Fan, Princeton University, New Jersey, USA, **Runze Li**, Pennsylvania State University, University Park, USA, **Cun-Hui Zhang**, Rudgers University, Piscataway, New Jersey, USA and **Hui Zou**

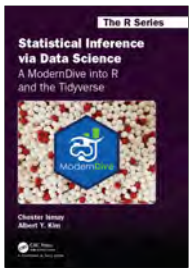
Series: Chapman & Hall/CRC Data Science Series

This book gives a comprehensive and systematic account of high-dimensional data analysis, including variable selection via regularization methods and sure independent feature screening methods. Offering more details on the topics than similar books, it is a valuable reference for researchers involved with model selection, variable selection, machine learning, and risk management. The book can also be used as a text for graduate and senior undergraduate students.

Chapman and Hall/CRC
Market: Statistics
August 2020: 235 x 156: 774pp
Hb: 978-1-466-51084-5: **£99.99**
eBook: 978-0-429-09628-0
* For **full contents** and more information, visit: **www.routledge.com/9781466510845**

TEXTBOOK • READER

Statistical Inference via Data Science: A ModernDive into R and the Tidyverse



Chester Ismay, DataCamp and **Albert Y. Kim**

Series: Chapman & Hall/CRC The R Series

This is a modern textbook in statistical inference, using the principles of data science through R and the Tidyverse. It assumes minimal background knowledge of the reader: there is no algebra, no calculus, and no prior programming/coding experience. It is designed to be a gentle introduction to the practice of analyzing data and answering questions using data the way data scientists, statisticians, data journalists, and other researchers would. This book is suitable for teaching a first course in statistical inference at undergraduate level.

Chapman and Hall/CRC
Market: Statistics
December 2019: 254 x 178: 460pp
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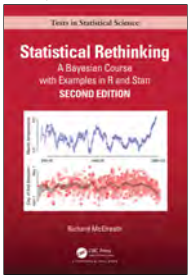
A Bayesian Course with Examples in R and STAN



Richard McElreath, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

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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.

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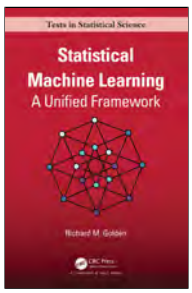

Richard Golden

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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.

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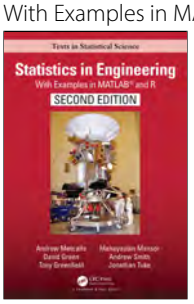

Andrew Metcalfe, University of Adelaide, Australia, **David Green**, **Tony Greenfield**, Greenfield Research, UK, **Mayhayaudin Mansor**, **Andrew Smith** and **Jonathan Tuke**

Series: Chapman & Hall/CRC Texts in Statistical Science

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 and Hall/CRC
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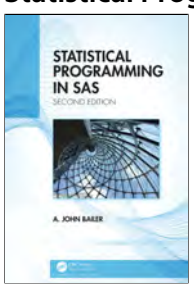
Statistical Programming in SAS



A. John Bailer

The book focuses on good programming and coding practice for producing data sets for later analyses, using simulation studies to explore statistical concepts and employing computationally intensive methods. Many of the topics included in the SAS Base Certification exam are included in this book along with topics such as SQL and Macros that are extensively considered in the SAS Advanced Certification Exam. Topics beyond either of these exams are also discussed such as high-quality graphical displays and text processing.

Chapman and Hall/CRC
Market: Statistics
December 2019: 254 x 178: 362pp
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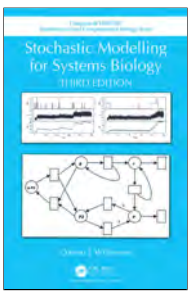

Darren J. Wilkinson, Newcastle University, UK

Series: Chapman & Hall/CRC Computational Biology Series

Having been thoroughly updated to reflect this, this third edition covers everything necessary for a good appreciation of stochastic kinetic modelling of biological networks in the systems biology context. New methods and applications are included in the book, and the use of R for practical illustration of the algorithms has been greatly extended. There is a whole new chapter on spatially extended systems, and the statistical inference chapter has also been extended with new methods, including approximate Bayesian computation (ABC). The book is now supplemented by an additional software library, written in Scala, described in a new appendix to the book.

Chapman and Hall/CRC
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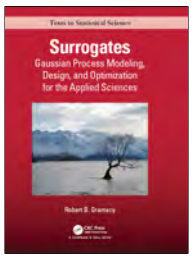

Robert B. Gramacy, Virginia Tech Department of Statistics, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

Surrogates: a graduate textbook, or professional handbook, on topics at the interface between machine learning, spatial statistics, computer simulation, meta-modeling (i.e., emulation), design of experiments, and optimization. Experimentation through simulation, "human out-of-the-loop" statistical support (focusing on the science), management of dynamic processes, online and real-time analysis, automation, and practical application are at the forefront.

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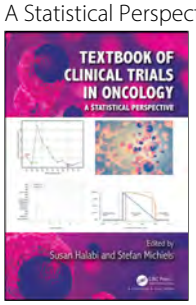
Textbook of Clinical Trials in Oncology

A Statistical Perspective



Edited by **Susan Halabi**, Duke University and **Stefan Michiels**

This is a textbook on the design and analysis of cancer clinical trials. It opens with a discussion of the choice of endpoints before moving onto discuss various types of trials across all phases of study, including basket trials, non-inferiority trials and multi-arm trials. It then covers some methodological topics, including missing data and competing risks, before several chapters cover aspects of personalized medicine. It includes contributions from various leading teachers and researchers, all thoroughly edited to ensure it is consistent in terms of level and style. It has lots of examples and case studies, and includes exercises to enable use as a course text or for self-study.

Chapman and Hall/CRC
Market: Statistics
May 2019: 254 x 178: 644pp
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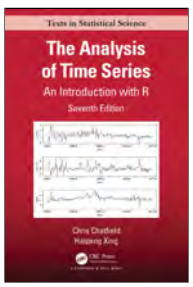
The Analysis of Time Series

An Introduction with R



Chris Chatfield, University of Bath, UK and **Haipeng Xing**, SUNY, Stony Brook, New York, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

This new edition of this classic title, now in its seventh edition, presents a balanced and comprehensive introduction to the theory, implementation, and practice of time series analysis. The book covers a wide range of topics, including ARIMA models, forecasting methods, spectral analysis, linear systems, state-space models, the Kalman filters, nonlinear models, volatility models, and multivariate models.

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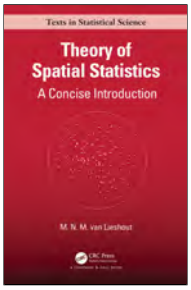
A Concise Introduction



M.N.M. van Lieshout, National Research Institute for Mathematics & Computer Scien

Series: Chapman & Hall/CRC Texts in Statistical Science

Spatial data are collected in various ways, for example, weather maps, soil samples, incident patterns, microscopical slices, satellite, radar, or X-ray images. The statistical analysis of spatial data is treated as a separate topic, as it is different from classical statistical data in a number of ways. This book presents a concise introduction to the theory underlying the analysis of the main types of spatial data. It includes examples to illustrate the topics, including R code for their implementation, as well as exercises to support course teaching and self-study.

Chapman and Hall/CRC
Market: Statistics
March 2019: 235 x 156: 182pp
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Pb: 978-0-367-14639-9: **£52.99**
eBook: 978-0-429-05286-6
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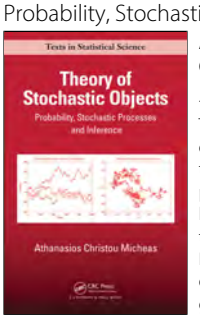
Probability, Stochastic Processes and Inference



Athanasios Christou Micheas, University of Missouri, Columbia, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

This book defines and investigates the concept of a random object. To accomplish this task in a natural way, it brings together three major areas; statistical inference, measure-theoretic probability theory and stochastic processes. This point of view has not been explored by existing textbooks. One would need to use one book on Real Analysis, one on Measure and/or Probability theory, one in Stochastic processes, and at least one on Statistics to capture the detail and depth of material that has gone into this text.

Chapman and Hall/CRC
Market: Statistics
January 2018: 254 x 178: 408pp
Hb: 978-1-466-51520-8: **£74.99**
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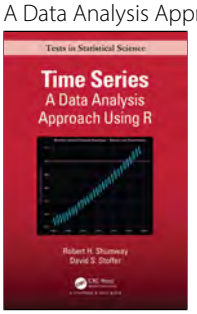
Time Series

A Data Analysis Approach Using R



Robert Shumway and **David Stoffer**, University of Pittsburgh, Pennsylvania, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

This textbook is designed for an introductory time series course where the prerequisites are an understanding of linear regression and some basic probability skills. All of the numerical examples were done using the R statistical package, and the code is typically listed at the end of an example.

Chapman and Hall/CRC
Market: Statistics
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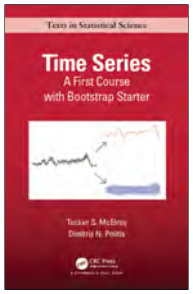
Time Series

A First Course with Bootstrap Starter



Tucker S. McElroy, U.S. Census Bureau, Washington, D.C., USA and **Dimitris N. Politis**, University of California, California, USA

Series: Chapman & Hall/CRC Texts in Statistical Science

The book provides the foundation of time series methods, including linear filters and a geometric approach to prediction. The important paradigm of ARMA models is studied in-depth, as well as frequency domain methods. Entropy and other information theoretic notions are introduced, with applications to time series modeling. The second half of the book focuses on statistical inference, the fitting of time series models, as well as computational facets of forecasting. Many time series of interest are nonlinear in which case classical inference methods can fail, but bootstrap methods may come to the rescue

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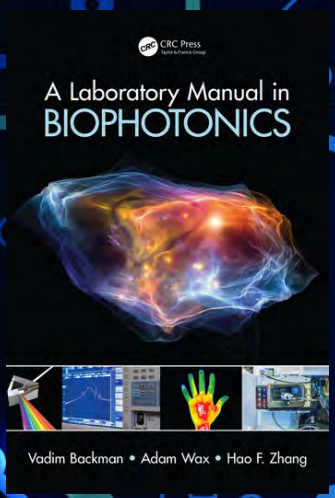

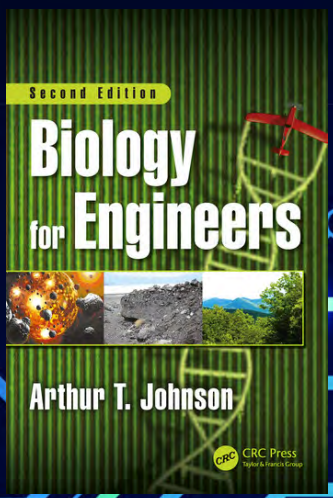

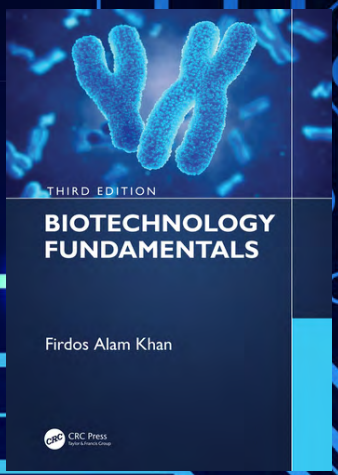

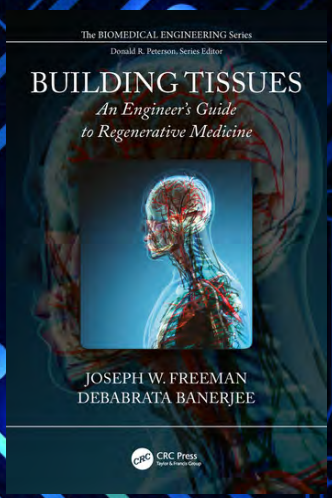

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