Routledge

Environmental and Geomatic Engineering Textbook Catalogue Spring 2025

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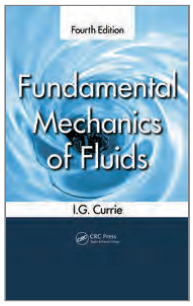
Contents

4TH EDITION

Fundamental Mechanics of Fluids



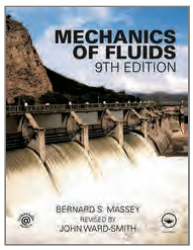
I.G. Currie University of Toronto, Ontario, Canada

Fully updated and expanded to reflect advances in modern mathematics, this fourth edition boasts 40 new homework problems (nearly 150 in total); new appendix material summarizing vectors, tensors, complex variables, and governing equations in common coordinate systems; and a new chapter on similarity solutions, group invariance solutions, separation of variables solutions, and some Fourier series representations. Illustrating basic equations and strategies to analyze fluid dynamics, mechanisms, and behavior, this new edition also contains reworked line drawings, revised problems, and extended end-of-chapter questions for clarification and expansion of key concepts.

CRC Press
August 2012 : 604pp
Hb: 978-1-439-87460-8 : **£145**
eBook: 978-0-429-09888-8
* For **full contents** and more information, visit: **www.routledge.com/9781439874608**

9TH EDITION

Mechanics of Fluids



John Ward-Smith (Formerly Brunel University, UK)

This ninth edition adds a section examining the modern context of fluid mechanics and associated issues including climate change, new forms of energy generation, and fresh water conservation.

CRC Press
August 2011 : 720pp
Pb: 978-0-415-60260-0 : **£58.99**
Hb: 978-0-415-60259-4 : **£210**
eBook: 978-1-315-27254-2
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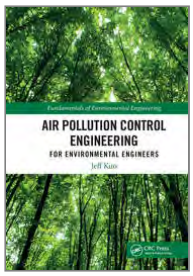
Air Pollution Control Engineering for Environmental Engineers



Edited by **Jeff Kuo**

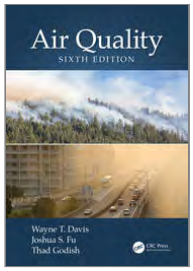
Series: Fundamentals of Environmental Engineering

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
December 2018 : 378pp
Hb: 978-1-138-03204-0 : **£115**
eBook: 978-0-429-18579-3
* For **full contents** and more information, visit: **www.routledge.com/9781138032040**

6TH EDITION

Air Quality



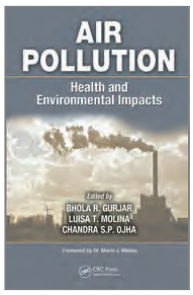
Wayne T. Davis University of Tennessee, Knoxville, USA**, Joshua S. Fu** University of Tennessee, Knoxville, USA**, Thad Godish** Ball State University, Muncie, Indiana, USA

The Air Quality field changes rapidly as new regulations are developed, particularly driven by climate change. This updated edition provides the latest information, including the newest technologies, regulations, and air quality management approaches. The areas on climate change are updated substantially. Through simple and precise language, scientific terms are explained in a holistic sense, and beginners and environmental practitioners alike with consider this book a trustworthy companion. The sixth edition includes additional information related to global air quality to better assess worldwide air quality conditions.

CRC Press
September 2023 : 423pp
Pb: 978-0-367-70523-7 : **£45.99**
Hb: 978-0-367-86092-9 : **£110**
eBook: 978-1-003-03259-5
* For **full contents** and more information, visit: **www.routledge.com/9780367705237**

Air Pollution

Health and Environmental Impacts

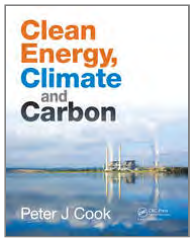


Edited by **Bhola R. Gurjar** Indian Institute of Technology, Roorkee, India**, Luisa T. Molina** Massachusetts Institute of Technology, Cambridge, USA**, C.S. P. Ojha** Indian Institute of Technology, Roorkee, India

Along with providing an understanding of the scientific basis of air pollution, this volume helps readers better appreciate social and environmental determinants of public health and apply country-based research evidence to reduce health disparities and environmental inequalities. It also encourages future research and policy action on the health and environmental consequences of air pollution from the local to global level. With contributions from a distinguished group of international experts, the book not only covers general modeling, monitoring, and characterization techniques but also includes field studies and cases that offer valuable insight into region-specific issues.

CRC Press
June 2010 : 556pp
Hb: 978-1-439-80962-4 : **£180**
eBook: 978-0-429-07559-9
* For **full contents** and more information, visit: **www.routledge.com/9781439809624**

Clean Energy, Climate and Carbon



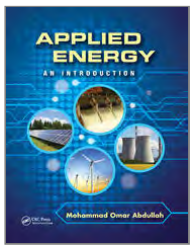
Peter J. Cook Cooperative Research Centre for Greenhouse Gas Technologies, Canberra, Australia

With the general reader in mind, Clean Energy, Climate and Carbon outlines the global challenge of decreasing greenhouse gas emissions. It covers the changing concentration of atmospheric carbon dioxide through time and its causes, before considering the promise and the limitations of a wide range of energy technologies for decreasing carbon dioxide emissions. The book also explores the political environment in which the discussion on clean energy technology options is occurring. What will a price on carbon do for technology uptake and what are the prospects of cutting our emissions by 2020 and of making even deeper cuts by 2050? What will the technology mix look like by that time? For people who are concerned about climate change, or who want to learn more about clean energy technologies, including CCS, this is the definitive view of the opportunities and the challenges we face in decreasing emissions despite a seemingly inexorable global increase in energy demand.

CRC Press
March 2012 : 230pp
Pb: 978-0-415-62106-9 : **£47**
Hb: 978-1-138-38154-4 : **£145**
* For **full contents** and more information, visit: **www.routledge.com/9780415621069**

Applied Energy

An Introduction



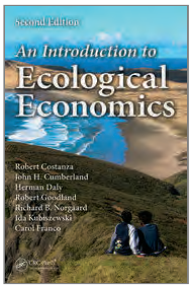
Mohammad Omar Abdullah

Focusing on renewable energy technologies, energy conversion, and conservation and the energy industry, this volume discusses energy applications in small-medium enterprises, solar energy, hydro and wind energy, nuclear energy, hybrid energy, and energy sustainability issues. The author lists the key aspects of applied energy and related studies, taking a question-based approach to the material that is useful for both undergraduate students and to postgraduates who want a broad overview of energy conversion. In addition to illustrations, the text contains numerous worked examples, case studies, and homework problems.

CRC Press
September 2019 : 444pp
Pb: 978-0-367-38073-1 : **£61.99**
Hb: 978-1-439-87157-7 : **£150**
eBook: 978-0-429-10075-8
* For **full contents** and more information, visit: **www.routledge.com/9780367380731**

2ND EDITION

An Introduction to Ecological Economics

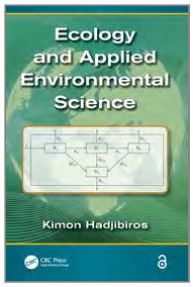


Robert Costanza Australian National University, Canberra, Australia**, John H Cumberland** University of Maryland, Solomons, USA**, Herman Daly** University of Maryland, College Park, USA**, Robert Goodland** World Bank, Washington DC, USA**, Richard B Norgaard** University of California at Berkeley, California**,, Ida Kubiszewski , Carol Franco**

This completely revised and updated second edition integrates the study and management of humans and the rest of nature. It provides a unified understanding of natural and human-dominated ecosystems and reintegrates the market economy within society and the rest of nature. The new edition adds a series of "boxes" to expand and update information in the current text and addresses such topical issues common asset trusts, payment for ecosystem services, and alternatives to GDP.

CRC Press
December 2014 : 356pp
Hb: 978-1-566-70684-1 : **£115**
eBook: 978-0-429-14155-3
* For **full contents** and more information, visit: **www.routledge.com/9781566706841**

Ecology and Applied Environmental Science

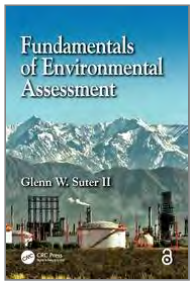


Kimon Hadjibiros National Technical University of Athens, Greece

This Open Access version of this textbook, available at http://www.taylorfrancis.com presents a brief theoretical approach to ecology, based on energy, populations, and cycles of chemical elements. It also presents a good selection of environmental problems with potential engineering, scientific, and managerial solutions. It takes an engineering approach and avoids too much biological detail. The book introduces system analysis and describes the structure and function of the ecosystem. It provides a short and comprehensive approach to appropriate environmental management, based on sound ecological theory and applied science and technology.

CRC Press
December 2019 : 290pp
Pb: 978-0-367-86776-8 : **£48**
Hb: 978-1-466-57009-2 : **£91**
eBook: 978-0-429-07154-6
* For **full contents** and more information, visit: **www.routledge.com/9780367867768**

Fundamentals of Environmental Assessment

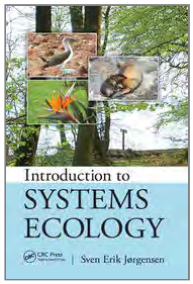


Glenn W. Suter II US Environmental Protection Agency, Cincinnati, Ohio, USA

Based on the "go to" book in the field of ecological risk assessment, this shorter, principles-based, updated textbook is essential for students and new practitioners who want to understand the purposes of environmental assessments and how to achieve them. It includes environmental risks to humans as well as nonhuman populations and ecosystems. Drawing upon the author's extensive experience in the field, the book explains fundamental principles and basic techniques and illustrates them with example applications which carry through multiple chapters and make this book a practical and hands-on guide. Both the content and the style are inviting and approachable to different levels of students.

CRC Press
June 2023 : 322pp
Hb: 978-0-367-70592-3 : **£92.99**
eBook: 978-1-003-15630-7
* For **full contents** and more information, visit: **www.routledge.com/9780367705923**

Introduction to Systems Ecology

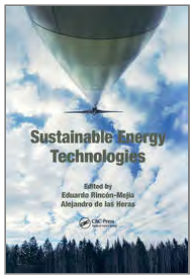


Sven Jorgensen

Using quantitative methods to understand how ecological systems operate and influence each other, this textbook presents a complete and practically applicable ecosystems theory. The book is built on fourteen principles for ecological systems, including the general application of energetics principles in systems ecology. Written by an internationally recognized expert, this work provides readers with a thorough understanding of how ecosystems work and how they react to disturbances such as pollution. The holistic systems ecology described has a wide application in conservation biology, ecological modeling, assessment of ecosystem health and sustainability, and ecotechnology.

CRC Press
September 2020 : 360pp
Pb: 978-0-367-86609-9 : **£52**
Hb: 978-1-439-85501-0 : **£115**
eBook: 978-0-429-10775-7
* For **full contents** and more information, visit: **www.routledge.com/9780367866099**

Sustainable Energy Technologies



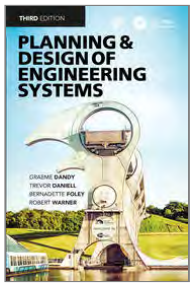
Edited by **Eduardo Rincón-Mejía , Alejandro de las Heras**

This book examines all facets of energy use, energy sources, and sustainable energy. It clearly explains the need for an integrated engineering approach to sustainable energies. The emphasis is on coupling and hybridizing systems to implement resilient and efficient alternatives to existing energy systems. It discusses current energy systems, both sustainable as well as those that claim to be sustainable. This book is a result of a collaborative work of many contributors from different backgrounds all focused on a particular approach to better integrate all technologies in a set of sustainable combinations. It includes solved practical problems and graphical content using MATLAB®.

CRC Press
June 2020 : 426pp
Pb: 978-0-367-57267-9 : **£45.99**
Hb: 978-1-138-03438-9 : **£185**
eBook: 978-1-315-26997-9
* For **full contents** and more information, visit: **www.routledge.com/9780367572679**

3RD EDITION

Planning and Design of Engineering Systems

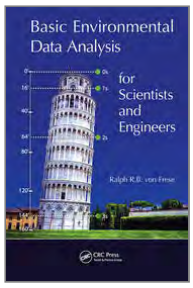


Graeme Dandy , Trevor Daniell , Robert Warner , Bernadette Foley , Graeme Dandy , David Walker
University of Adelaide, Australia**, Trevor Daniell**

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
December 2017 : 460pp
Pb: 978-1-138-03190-6 : **£42.99**
Hb: 978-1-138-03189-0 : **£110**
eBook: 978-1-351-22812-1
* For **full contents** and more information, visit: **www.routledge.com/9781138031906**

Basic Environmental Data Analysis for Scientists and Engineers

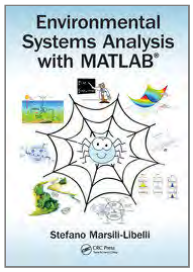


Ralph R.B. Von Frese

This hands-on textbook introduces basic concepts of modern digital data analysis and graphics including numerical/graphical calculus, measurement units and dimensional analysis, non-statistical and statistical error analysis, etc. It emphasizes array-based or matrix inversion and spectral analysis using the fast Fourier transform (FFT) that dominates modern data analysis. It is comprehensive and better suited for student exploration efforts using modern equation solving software like MATLAB®, Mathematica, MathCad, etc. This textbook is focused on the basic mathematical methods, which distinguishes it from the rest of software focused textbooks.

CRC Press
January 2023 : 298pp
Pb: 978-1-032-47506-6 : **£43.99**
Hb: 978-1-138-62778-9 : **£110**
eBook: 978-0-429-29121-0
* For **full contents** and more information, visit: **www.routledge.com/9781032475066**

Environmental Systems Analysis with MATLAB®



Stefano Marsili-Libelli University of Florence, Italy

This book explains how to use leading-edge numerical techniques to develop simple but successful models of environmental processes or to analyze environmental data sets. Ready-made computer codes in MATLAB® are available to assist the reader in adapting his or her problem to the theory described here. The material is organized in such a way that the book can be used either as an end-to-end textbook in environmental systems analysis or as a handbook to address a specific problem.

CRC Press
February 2018 : 562pp
Pb: 978-1-138-49078-9 : **£76.99**
Hb: 978-1-498-70635-3 : **£180**
eBook: 978-1-315-37044-6
* For **full contents** and more information, visit: **www.routledge.com/9781138490789**

2ND EDITION

Real-Time Environmental Monitoring

Sensors and Systems - Textbook and Lab Manual

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

Both the textbook and lab manual introduce engineering students to the fundamentals and applications of real-time environmental monitoring based on electronic sensors, instruments, systems, and software that allow continuous, long-term ecological and environmental data collection. Tested in classrooms by the author, the second edition includes applications with state-of-the-art sensor technology and programs such as R, Python, Arduino, and SQL. Written to help both students and instructors in engineering better understand how to use and design a variety of sensors and build systems and databases when monitoring different environments such as soil, water, and air.

CRC Press
December 2023 : 720pp
Hb: 978-1-032-01266-7 : **£145**
* For **full contents** and more information, visit: **www.routledge.com/9781032012667**

Spatiotemporal Analytics

Jay Lee

This book introduces readers to spatiotemporal analytics that are extended from spatial statistics. Spatiotemporal analytics help analysts to quantitatively recognize and evaluate the spatial patterns and their temporal trends of a set of geographic events or objects, which is important in geography, environmental sciences, economy, and many other domains. This book explains in simple terms the concepts of spatiotemporal data and statistics, theories, and methods used. Each chapter introduces a case study as an example application for an in-depth learning process. The software used and the codes provided enable readers to learn statistics and use them effectively in their projects.

CRC Press
March 2023 : 266pp
Hb: 978-1-032-30305-5 : **£86.99**
eBook: 978-1-003-30439-5
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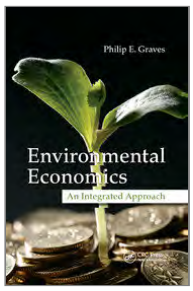
Environmental Economics

An Integrated Approach



Philip E. Graves

Rigorous, yet written in a way that facilitates understanding of sometimes difficult material, this book provides practical and working knowledge of how environmental policy analysis is conducted in the United States and, to a lesser extent, elsewhere. It details the tools required to conduct that analysis and also discusses weaknesses in the existing methods, underlining areas for future improvement. This approach allows readers to get a sense of what is known and what is not known about environmental economics.

CRC Press
June 2019 : 264pp
Pb: 978-0-367-37960-5 : **£61.99**
Hb: 978-1-466-51801-8 : **£105**
eBook: 978-0-429-18526-7
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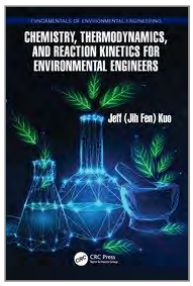
Chemistry, Thermodynamics, and Reaction Kinetics for Environmental Engineers



Jeff Kuo

Series: Fundamentals of Environmental Engineering

This book aims to be the preeminent university chemistry textbook for environmental engineers. It provides undergraduate and graduate environmental engineering students with basic concepts and practical knowledge about chemistry that they would need throughout their professional careers. It focuses on the fundamental concepts of chemistry and its practical applications (e.g., understanding fate and transport of chemicals/pollutants in the environmental as well as the chemical/physicochemical processes applied in environmental engineering and related industries).

CRC Press
September 2024 : 344pp
Hb: 978-1-032-81983-9 : **£91.99**
eBook: 978-1-003-50266-1
* For **full contents** and more information, visit: **www.routledge.com/9781032819839**

Experiment Design for Environmental Engineering

Methods and Examples

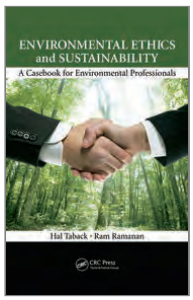
Francis J. Hopcroft , Abigail Charest Wentworth Institute of Technology, MA, USA

This book provides a wide range of practical environmental engineering laboratory experiments for implementation by students in a university laboratory or by practicing professionals in the field, along with an extensive discussion on how to design an experiment that will provide meaningful and useful data, how to interpret the data generated from an experiment, and how to present those data to an audience of other students or professionals. The example experiments provide a way to evaluate a new design against an existing experiment to determine what information is most appropriate in each section and how to format the data for the most effective outcome.

CRC Press
May 2024 : 368pp
Pb: 978-1-032-02618-3 : **£45.99**
Hb: 978-1-032-01704-4 : **£115**
eBook: 978-1-003-18424-9
* For **full contents** and more information, visit: **www.routledge.com/9781032026183**

Environmental Ethics and Sustainability

A Casebook for Environmental Professionals



Hal Taback Environmental Consultant, Carlsbad, California, USA**, Ram Ramanan** Illinois Institute of Technology, Chicago, USA

The environmental professional must be educated to be ethical, and more importantly, trained through frequent participatory workshops with real-world scenarios to be able to make the right choices when faced with environmental dilemmas. This book serves as a reference and a resource casebook, presenting current real-world situations and providing perspectives to numerous environmental ethics scenarios. It provides specific guidance as to what is ethical behavior, how to judge it, and the foundations of ethical behavior in facing and resolving environmental ethical dilemmas.

CRC Press
July 2013 : 268pp
Hb: 978-1-466-58420-4 : **£130**
eBook: 978-0-429-10334-6
* For **full contents** and more information, visit: **www.routledge.com/9781466584204**

Sustainability and Design Ethics, Second Edition

Jean Russ

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
November 2018 : 200pp
Pb: 978-1-138-58368-9 : **£71.99**
Hb: 978-1-138-39041-6 : **£145**
eBook: 978-0-429-50658-1
* For **full contents** and more information, visit: **www.routledge.com/9781138583689**

Introduction to Sustainability for Engineers

Toolseeram Ramjeawon Faculty of Engineering, University of Mauritius, Reduit, Mauritius

This book aims to incorporate sustainability into curricula for undergraduate engineering students. The book starts with an introduction to the concept of sustainability, outlining core principles for sustainable development to guide engineering practice and decision making, including key tools aimed at enabling, measuring and communicating sustainability. It also describes concepts as life cycle analysis, environmental economics, related institutional architecture and policy framework, business context of sustainability, and sustainable architecture. Appendices at the end of the book presents a summary of key concepts, strategies and tools introduced in the main text.

CRC Press
February 2020 : 392pp
Hb: 978-0-367-25445-2 : **£115**
eBook: 978-0-429-28785-5
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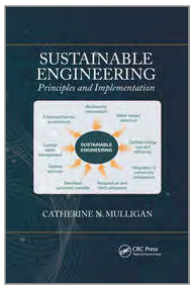
Sustainable Engineering

Principles and Implementation

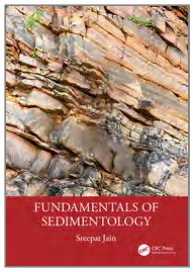


Catherine Mulligan

Due to the constraints on resources and the environment, engineers are faced with new challenges. While it is generally believed that the concepts of sustainable development must be adhered to protect future generations, in practice it is very difficult. Therefore, the focus of this book is to provide both conceptual understanding and practical skills to apply sustainable engineering principles to engineering design. This book provides a comprehensive overview of the interdisciplinary field of sustainability as it applies to engineering. It will describe the tools, protocols and guidelines that are currently available through case studies and examples from around the world.

CRC Press
September 2020 : 232pp
Pb: 978-0-367-65666-9 : **£45.99**
Hb: 978-1-498-77458-1 : **£145**
eBook: 978-0-429-02746-8
* For **full contents** and more information, visit: **www.routledge.com/9780367656669**

Fundamentals of Sedimentology



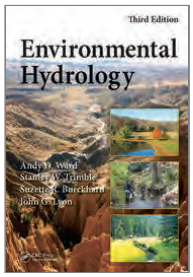
Sreepat Jain Dept. of Applied Geology, Adama Science and Technology University, Ethiopia

This new textbook is a modern look at the key concepts of sedimentology. With lavish, colorful, and abundant illustrations and easy-to-understand explanations, the book focuses on the concepts required to understand physical, chemical, and biological characteristics of sedimentary rocks and the processes involved in their formation. This includes the transportation, deposition, and transformation of sediments. It also emphasizes how the understanding of sedimentary rocks can be used to interpret all continental, marginal marine, and deep-water oceanic environments. Written with undergraduate-level students in mind, it serves as a primary textbook for the new generation of students.

CRC Press
December 2024 : 502pp
Hb: 978-1-032-30534-9 : £110
eBook: 978-1-003-30562-0
* For **full contents** and more information, visit: **www.routledge.com/9781032305349**

3RD EDITION

Environmental Hydrology



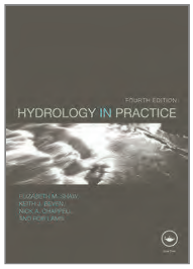
Andy D. Ward Ohio State University, Columbus, USA**, Stanley W. Trimble** University of California, Los Angeles, USA**, Suzette R. Burckhard** South Dakota State University, Brookings, USA**, John G. Lyon** Clifton, Virginia, USA

This new edition promises to educate those new to hydrology and challenge professionals alike with insightful solutions to classical problems as well as new approaches so important to the evolving genre. It enhances materials in the 2nd Edition and has expanded information on many topics and in particular evapotranspiration, soil erosion, two-stage ditch design and applications, and stream processes. There are new sections on rock structures in streams, hypoxia, harmful algal blooms, agricultural practices to reduce nutrient discharges into water resources, as well as new end-of-chapter problems. Also, the format has been enhanced to aid the reader in finding tables, figures, and equations.

CRC Press
September 2015 : 696pp
Hb: 978-1-466-58941-4 : **£145**
eBook: 978-0-429-16860-4
* For **full contents** and more information, visit: **www.routledge.com/9781466589414**

4TH EDITION

Hydrology in Practice



Elizabeth M. Shaw , Keith Beven Lancaster University, UK**, Nick A. Chappell** Lancaster University, UK**, Rob Lamb** JBA Consulting, UK

This is an introductory textbook for engineering hydrology students who would go on to be practitioners in consultancies. The 4th edition replaces the material on the Flood Studies Report with an equivalent section on the methods of the Flood Estimation Handbook and its revisions. Other completely revised sections on instrumentation and modelling reflect the many changes that have occurred over recent years. Up to date methods and case studies and a wider range of material on hydrological processes are also included. Selected Contents: Part 1: Hydrological Measurements Part 2: Hydrological Analysis and Modelling Part 3: Applications

CRC Press
July 2010 : 560pp
Pb: 978-0-415-37042-4 : **£54.99**
Hb: 978-0-415-37041-7 : **£185**
eBook: 978-1-315-27490-4
* For **full contents** and more information, visit: **www.routledge.com/9780415370424**

Fundamentals of Environmental Law and Compliance

Daniel Rogers

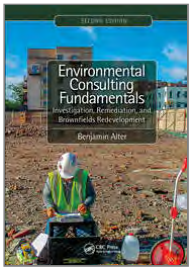
This textbook provides readers with the fundamentals and the intent of environmental regulations so that compliance can be greatly improved and streamlined. Through numerous examples and case studies it explains concepts from how environmental laws are applied and work, to why pollution prevention and sustainability are critical for the future of all life on Earth. It is organized to accommodate different needs for students with different backgrounds and career choices. It is also useful for site safety managers, research technicians, and other young professionals wanting to apply environmental regulations to their facilities and staying up to date on recently changed regulations.

CRC Press
August 2024 : 460pp
Pb: 978-1-032-00804-2 : **£45.99**
Hb: 978-1-032-00678-9 : **£105**
eBook: 978-1-003-17581-0
* For **full contents** and more information, visit: **www.routledge.com/9781032008042**

2ND EDITION

Environmental Consulting Fundamentals

Investigation, Remediation, and Brownfields Redevelopment, Second Edition



Benjamin Alter

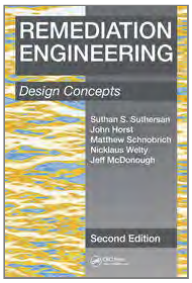
The second edition introduces the basic building blocks of environmental consulting by emphasizing the thought processes that go into designing an environmental study, interpreting the data, and selecting the next step for investigation or remediation. This edition is revised and updated with regard 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
January 2023 : 440pp
Pb: 978-1-032-47547-9 : **£43.99**
Hb: 978-1-138-61320-1 : **£120**
eBook: 978-0-429-46437-9
* For **full contents** and more information, visit: **www.routledge.com/9781032475479**

2ND EDITION

Remediation Engineering

Design Concepts, Second Edition

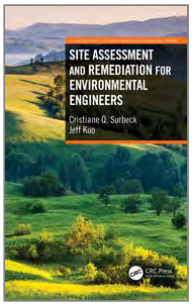


Suthan S. Suthersan ARCADIS, Newtown, Pennsylvania, USA**, John Horst** ARCADIS, Newtown, Pennsylvania, USA**, Matthew Schnobrich** ARCADIS, Newtown, Pennsylvania, USA**, Nicklaus Welty** ARCADIS, Newtown, Pennsylvania, USA**, Jeff McDonough** ARCADIS, Newtown, Pennsylvania, USA

Remediation engineering has evolved and advanced from the stage of being a sub-discipline of environmental engineering into its own engineering discipline supporting the growth of a global industry. This fully-updated second edition will capture the fundamental advancements that have taken place during the last two decades, within the sub-disciplines that form the foundation of the remediation engineering platform. The book will cover the entire spectrum of current technologies that are being employed in this industry, and will also touch on future trends and how practitioners should anticipate and adapt to those needs.

CRC Press
December 2016 : 627pp
Hb: 978-1-498-77327-0 : **£185**
eBook: 978-1-315-36708-8
* For **full contents** and more information, visit: **www.routledge.com/9781498773270**

Site Assessment and Remediation for Environmental Engineers



Cristiane Q. Surbeck , Jeff Kuo California State University, Fullerton, USA

Series: Fundamentals of Environmental Engineering

This book serves as a primary textbook for environmental site investigation and remediation of subsurface soil and groundwater. It introduces concepts and principles of field investigative techniques to adequately determine the extent of contamination in the subsurface for the selection of clean-up alternatives. It then focuses on practical calculations and skills needed to design and operate remediation systems that will both educate students and be useful for entry-level professionals in the field.

CRC Press
August 2022 : 322pp
Pb: 978-0-367-70973-0 : **£43.99**
Hb: 978-1-138-38545-0 : **£110**
eBook: 978-0-429-42710-7
* For **full contents** and more information, visit: **www.routledge.com/9780367709730**

2ND EDITION

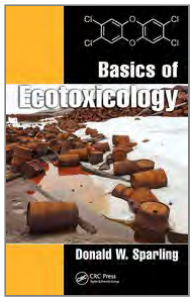
Introduction to Environmental Management

Mary K. Theodore Manhattan College, Riverdale, New York, USA**, Louis Theodore** Manhattan College, New York, USA

Written at a level that is accessible to students in all disciplines, Introduction to Environmental Management, Second Edition translates complex environmental issues into practical and understandable terms. The book provides students and practitioners an understanding of the regulations, pollutants, and waste management issues that can be applied in various related environmental fields and industries. This new edition is updated throughout and adds eleven new chapters, including coverage of water conservation, water toxins, measurement methods, desalination, industrial ecology, legal issues, and more.

CRC Press
October 2024 : 556pp
Pb: 978-0-367-77386-1 : **£45.99**
Hb: 978-0-367-75810-3 : **£105**
eBook: 978-1-003-17112-6
* For **full contents** and more information, visit: **www.routledge.com/9780367773861**

Basics of Ecotoxicology



Donald W. Sparling Cooperative Wildlife Research Laboratory, Southern Illinois University, Murphysboro, IL USA

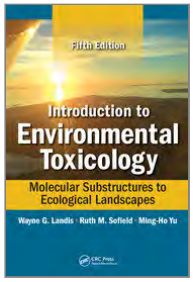
This textbook presents a comprehensive examination of environmental science and ecotoxicology for undergraduate students. The material provides sufficient related background information leading to a competency to clearly understand ecotoxicology concepts and topics.

CRC Press
July 2017 : 238pp
Hb: 978-1-138-03171-5 : **£110**
eBook: 978-1-315-15806-8
* For **full contents** and more information, visit: **www.routledge.com/9781138031715**

5TH EDITION

Introduction to Environmental Toxicology

Molecular Substructures to Ecological Landscapes, Fifth Edition



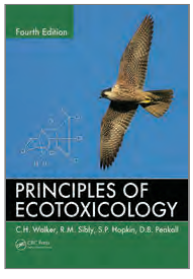
Wayne Landis Western Washington University, Institute of Environmental Toxicology, Huxley College of the Environment, Bellingham, USA**, Ruth Sofield** Western Washington University, Bellingham, USA**, Ming-Ho Yu** Western Washington University, Bellingham, USA

This new, fifth edition will be thoroughly revised, and will add all new information on how climate change affects exposure and the effects of toxicants in the environment. It will now be illustrated in full color throughout, and will add numerous case studies from around the world. It will also add new information on species sensitivity distributions and their strengths and weaknesses in estimating toxicological effects on ecological communities, the use of environmental DNA as a potential marker for community structure and the effects of toxicants in a variety of environments, mercury toxicity, and place diverse aspects of environmental toxicology into a unified context.

CRC Press
September 2017 : 490pp
Hb: 978-1-498-75042-4 : **£120**
eBook: 978-1-315-11786-7
* For **full contents** and more information, visit: **www.routledge.com/9781498750424**

4TH EDITION

Principles of Ecotoxicology

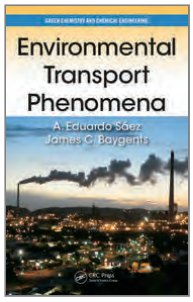


C.H. Walker Devon, UK**, R.M. Sibly** University of Reading, UK**, S.P. Hopkin , D.B. Peakall**

Emphasizing principles rather than practice, this new edition of a bestseller continues to give readers an integrated view of ecotoxicology, from molecules to ecosystems. It describes the major classes of pollutants and discusses their effects on living organisms. It also addresses the question, "what effects do pollutants have on populations, communities, and the whole ecosystem?" In addition to updating the text throughout, this edition includes information on nanoparticle pollution, offers new case studies, and expands coverage of bioaccumulation, biomarkers, and risk assessment. A new chapter explores future prospects for ecotoxicology.

CRC Press
March 2012 : 386pp
Pb: 978-1-439-86266-7 : **£64.99**
Hb: 978-1-138-42384-8 : **£185**
eBook: 978-0-429-18422-2
* For **full contents** and more information, visit: **www.routledge.com/9781439862667**

Environmental Transport Phenomena



A. Eduardo Sáez University of Arizona, Tucson, USA**,**
James C. Baygents University of Arizona, Tucson, USA

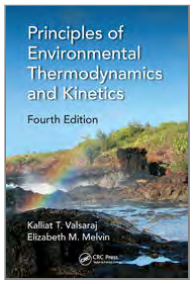
Series: Green Chemistry and Chemical Engineering

This book offers a detailed yet accessible introduction to transport phenomena. It begins by explaining the underlying principles and mechanisms that govern mass transport, and continues by tackling practical problems spanning all subdisciplines of environmental science and chemical engineering. Assuming some knowledge of ordinary differential equations and a familiarity with basic fluid mechanics applications, this classroom-tested text addresses mass conservation and macroscopic mass balances, placing a special emphasis on applications to environmental processes and presenting a mathematical framework for formulating and solving transport phenomena problems.

CRC Press
December 2014 : 244pp
Hb: 978-1-466-57623-0 : **£145**
eBook: 978-0-429-10173-1
* For **full contents** and more information, visit: **www.routledge.com/9781466576230**

4TH EDITION

Principles of Environmental Thermodynamics and Kinetics



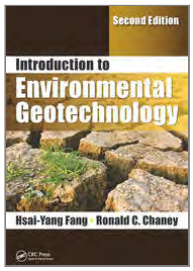
Kalliat T. Valsaraj , Elizabeth M. Melvin

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
June 2020 : 496pp
Pb: 978-0-367-57205-1 : **£45.99**
Hb: 978-1-498-73363-2 : **£135**
eBook: 978-0-429-49183-2
* For **full contents** and more information, visit: **www.routledge.com/9780367572051**

2ND EDITION

Introduction to Environmental Geotechnology

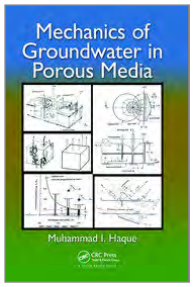


Hsai-Yang Fang Lehigh University, Bethlehem, Pennsylvania, USA**, Ronald C. Chaney** Cal Poly Humboldt, USA

This new edition of a bestseller presents updated technology advances that have occurred since publication of the first edition. It increases the utility and scope of the content through numerous case studies and examples and an entirely new set of problems and solutions. The book also has an accompanying instructor's guide and presents rubrics by which instructors can increase student learning and evaluate student outcomes, chapter by chapter. The book focuses on the increasing importance of water resources and energy in the broader context of environmental sustainability. It's interdisciplinary coverage includes soil science, physical chemistry, mineralogy, geology, and ground pollution.

CRC Press
October 2016 : 677pp
Hb: 978-1-439-83730-6 : **£130**
eBook: 978-1-315-37473-4
* For **full contents** and more information, visit: **www.routledge.com/9781439837306**

Mechanics of Groundwater in Porous Media



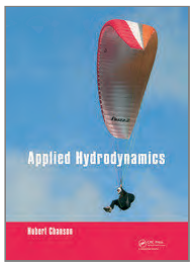
Muhammad I. Haque George Washington University, Washington, District of Columbia, USA

Maintaining a careful balance between mathematical rigor and the physical aspects of groundwater movement, this senior undergraduate- and graduate-level environmental engineering text covers the topic from theory to practice. Avoiding unnecessary mathematical subtleties and oversimplifications of qualitative descriptions, the book assumes calculus knowledge generally acquired during the first two semesters at a university, while further developing the skills needed for the analysis of groundwater movement. Featuring numerous illustrations and worked examples, the text also makes an excellent professional reference for engineers, geologists, and hydrologists.

CRC Press
March 2017 : 280pp
Pb: 978-1-138-07222-0 : **£58.99**
Hb: 978-1-466-58504-1 : **£155**
eBook: 978-0-429-10309-4
* For **full contents** and more information, visit: **www.routledge.com/9781138072220**

Applied Hydrodynamics

An Introduction

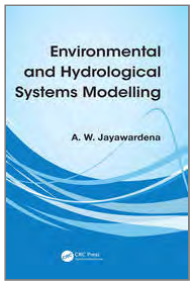


Hubert Chanson The University of Queensland, Brisbane, Australia

This textbook is grouped into two complementary sections: ideal fluid flow and real fluid flow. The former deals with two- and possibly three-dimensional fluid motions that are not subject to boundary friction effects, while the latter considers the flow regions affected by boundary friction and turbulent shear. The lecture material is designed as an intermediate course in fluid dynamics for senior undergraduate and postgraduate students in Civil, Environmental, Hydraulic and Mechanical Engineering. It is supported by notes, applications, remarks and discussions in each chapter. Moreover a series of electronic appendices is added on the website. Homework assignments are developed.

CRC Press
August 2013 : 448pp
Hb: 978-1-138-00093-3 : **£105**
eBook: 978-0-429-22783-7
* For **full contents** and more information, visit: **www.routledge.com/9781138000933**

Environmental and Hydrological Systems Modelling

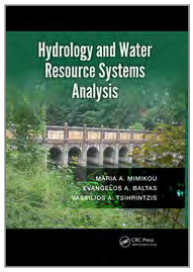


A W Jayawardena The University of Hong Kong

Providing the tools students and professionals need, this book details different approaches to modelling the water environment over a range of spatial and temporal scales. Their applications are shown with a series of case studies, taken mainly from the Asia-Pacific Region. Topics include linear systems, conceptual models, data driven models, process-based models, risk-management models, model parameter estimation as well as model calibration, validation, and testing.

CRC Press
January 2014 : 536pp
Pb: 978-0-415-46532-8 : **£76**
eBook: 978-1-315-27244-3
* For **full contents** and more information, visit: **www.routledge.com/9780415465328**

Hydrology and Water Resource Systems Analysis



Maria A. Mimikou National Technical University of Athens, Greece**, Evangelos A. Baltas** National Technical University of Athens, Greece**, Vassilios A. Tsihrintzis** National Technical University of Athens, Greece

Hydrology and water resources analysis can be looked at together, but this is the only book that presents the relevant material and bridges the gap between scientific processes and applications in one text. It is written for advanced undergraduate and graduate students and for practitioners. It can assist hydrologists and water-related professionals with an unfamiliar term or a new subject area, a formula, the procedure for solving a problem, guidance on the available computer packages, or how to obtain values from a table of data.

CRC Press
November 2018 : 464pp
Pb: 978-0-367-02801-5 : **£25.99**
Hb: 978-1-466-58130-2 : **£81.99**
eBook: 978-1-315-37424-6
* For **full contents** and more information, visit: **www.routledge.com/9780367028015**

3RD EDITION

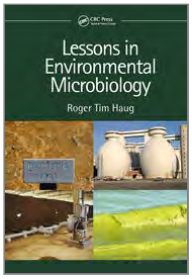
Environmental Microbiology for Engineers

Volodymyr Ivanov Iowa State University, Ames, USA; Nanyang Technological University, Singapore

The third edition of Environmental Microbiology for Engineers explores the role that microorganisms play in the engineered protection and enhancement of an environment. Offering a perfect balance of microbiological knowledge and environmental biotechnology principles, it provides a practical understanding of microorganisms and their functions in the environment and in the environmental engineering systems. The book also presents a quantitative description of applied microbiological processes and their engineering design.

CRC Press
August 2024 : 524pp
Pb: 978-0-367-52504-0 : **£45.99**
Hb: 978-0-367-32165-9 : **£110**
eBook: 978-0-429-31715-6
* For **full contents** and more information, visit: **www.routledge.com/9780367525040**

Lessons in Environmental Microbiology

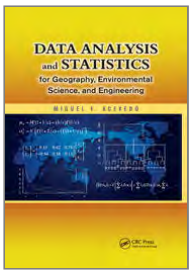


Roger Tim Haug Consultant,Torrance, California, USA; Loyola Marymount University-Emeritus

This new book provides an understanding of the microbial processes used in the environmental engineering and science fields. It examines both basic theory as well as the latest advancements in practical applications, including nutrient removal and recovery, methanogenesis, suspended growth bioreactors, and more. The information is presented in a very user-friendly manner, it is not assumed that readers are already experts in the field. It also offers a brief history of how microbiology relates to sanitary practice, and examines the lessons learned from the great epidemics of the past. Numerous worked example problems are presented in every chapter.

CRC Press
August 2019 : 790pp
Hb: 978-1-138-33658-2 : **£145**
eBook: 978-0-429-44290-2
* For **full contents** and more information, visit: **www.routledge.com/9781138336582**

Data Analysis and Statistics for Geography, Environmental Science, and Engineering



Miguel F. Acevedo

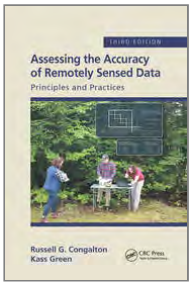
This practical, classroom-tested textbook helps readers learn quantitative methodology, including how to implement advanced analysis methods using an open-source software platform. Based on the author's many years of teaching undergraduate and graduate students in several countries, the book brings together principles of statistics and probability, multivariate analysis, and spatial analysis methods applied to a variety of geographical and environmental models. Theory is accompanied by practical hands-on computer exercises, progressing from easy to difficult. The text also presents a review of mathematical methods, making the book self-contained.

CRC Press
December 2019 : 560pp
Pb: 978-0-367-86679-2 : **£52**
Hb: 978-1-439-88501-7 : **£115**
eBook: 978-0-429-16914-4
* For **full contents** and more information, visit: **www.routledge.com/9780367866792**

3RD EDITION

Assessing the Accuracy of Remotely Sensed Data

Principles and Practices, Third Edition



Russell G. Congalton , Kass Green

The field of assessing the accuracy of maps derived from remotely sensed data has continued to develop and mature since the first edition of this book in 1999. The third edition will have all chapters reviewed and updated with any new information available today. It will include a redo of spatial accuracy chapter to update for new ASPRS standards and better explain the issue with RMSE. Another new chapter on AA sampling for objects vs pixels will be included; an object-based case study and more information on proportional sampling. Finally, an entire new chapter on collection of reference data for general use and sharing in the public domain will complete the third edition.

CRC Press
September 2020 : 348pp
Pb: 978-0-367-65667-6 : **£45.99**
Hb: 978-1-498-77666-0 : **£145**
eBook: 978-0-429-05272-9
* For **full contents** and more information, visit: **www.routledge.com/9780367656676**

3RD EDITION

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
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Remote Sensing and Digital Image Processing with R - Textbook and Lab Manual

Marcelo de Carvalho Alves , Luciana Sanches

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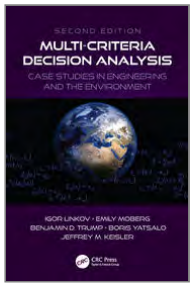

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Decision Analysis has become more widely recognized as an important process for translating science into management action. With climate change as a driving force in creating environmental problems, there is a great need for understanding decision making framework through a case-study based approach. This thoroughly updated second edition provides seven additional new case studies focused on sustainability. The breadth of the applications using MCDA methodologies combined with corresponding decision models implemented using DECERNS software package, this book is a great resource for professionals and students in learning and applying similar frameworks to other environmental projects.

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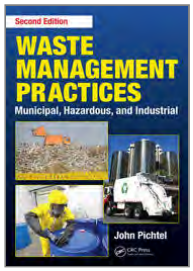

John Pichtel Ball State University, Muncie, Indiana, USA

A practical guide for the identification and management of a range of hazardous wastes, this book integrates technical information including chemistry, microbiology, and engineering, with current regulations. Emphasizing basic environmental science and related technical fields, the book is an introductory manual for waste management as mandated by the Resource Conservation and Recovery Act (RCRA) and related statutes.

CRC Press
February 2014 : 682pp
Hb: 978-1-466-58518-8 : **£180**
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A Wealth from Waste Approach

J.P.N. Rai , Shweta Saraswat

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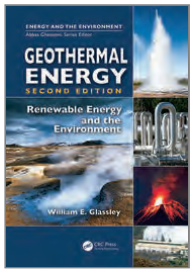

William E. Glassley Department of Earth and Planetary Sciences and The Energy Institute, University of California, Davis, USA, and Geologisk Institut, Aarhus University, Denmark

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Fully updated and featuring a new chapter on enhanced geothermal systems, this second edition of a Choice Award winner contains the latest scientific information used to discern applications and regions best suited for geothermal energy. Stressing environmental effects related to acquisition and consumption, the text explores where geothermal energy comes from and how to find it, as well as how it can be accessed, applied, and improved for future use. It provides background, theory, and practical techniques for implementing different types of geothermal energy projects.

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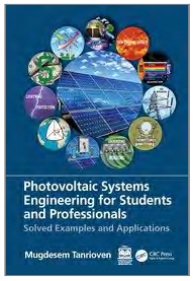

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Photovoltaic Systems Engineering for Students and Professionals: Solved Examples and Applications examines photovoltaic (PV) power plants in a holistic way. PV installations of all types and sizes- from the smallest plant element to the largest system components- are approached from an electrical engineering perspective, and further explained through worked examples. It presents the different forms of energy and the energy conversions between them in a clear and understandable way. The book is both an essential resource for students as well as practicing engineers working in the solar photovoltaic areas and critical work for all electrical engineers.

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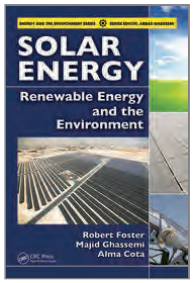

Robert Foster MSC WERC, Las Cruces, New Mexico, USA**, Majid Ghassemi** New Mexico Tech, Albuquerque, New Mexico, USA**, Alma Cota**

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Drawing on the authors' extensive research and project implementation around the globe, this book provides detailed knowledge for converting solar radiation into a suitable energy supply. It presents technical fundamentals to give a clear understanding of how solar energy can be captured for later use. The authors examine thermosolar collectors, photovoltaics modules, and other important types of solar receivers as well as cover typical cost-effective applications, including water pumping, residential electrification, lighting, small-scale irrigation, and more. Examples, case studies, and lessons learned from technical failures illustrate how to best implement solar energy projects.

CRC Press
August 2009 : 380pp
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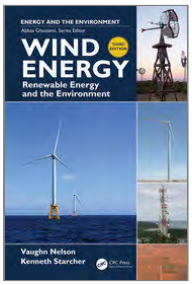

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Series: Energy and the Environment

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
November 2018 : 326pp
Hb: 978-1-138-61534-2 : **£130**
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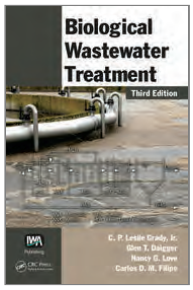

C. P. Leslie Grady, Jr. Clemson University, South Carolina, USA**, Glen T. Daigger** CH2M Hill, Englewood, Colorado, USA**, Nancy G. Love** University of Michigan, Ann Arbor, USA**, Carlos D. M. Filipe** McMaster University, Hamilton, Ontario, Canada

Written by experts in the field, this thoroughly updated third edition covers commonly used and emerging suspended and attached growth reactors. Drawing on their extensive academic and industrial experience, the authors discuss combined carbon and ammonia oxidation, activated sludge, biological nutrient removal, aerobic digestion, anaerobic processes, lagoons, trickling filters, rotating biological contactors, fluidized beds, and biologically aerated filters. They integrate the principles of biochemical processes with applications in the real world, communicating approaches to the conception, design, operation, and optimization of biochemical unit operations in a comprehensive yet lucid manner.

CRC Press
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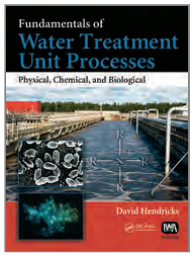
Fundamentals of Water Treatment Unit Processes

Physical, Chemical, and Biological



David Hendricks Colorado State University, Fort Collins, USA

Balancing coverage of theoretical and practical principles, Fundamentals of Water Treatment Unit Processes comprehensively explores physical-chemical and biological unit processes applicable to water treatment. Concise yet comprehensive, the text reviews historical development and then highlights key concepts for each unit process. With chapter glossaries, sidebars, illustrative examples, spreadsheet tables, problems, and a solutions manual, this book serves as an ideal resource for graduate students, since it offers a complete presentation of the full scope of biological treatment. Additional supporting material is available for download on the web.

CRC Press
November 2010 : 928pp
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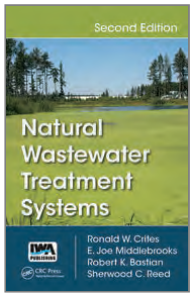

Ronald W. Crites Brown and Caldwell, Davis, California, USA**, E. Joe Middlebrooks** Superior, Colorado, USA**, Robert K. Bastian**

This new edition examines all changes and advancements that have taken place since the previous edition published in 2005. It outlines the planning, feasibility assessment, and site selection methods unique to natural processes as well as the basic process responses and interactions governing natural systems. It examines the systems in detail, discussing wastewater pond systems, free water surface constructed wetlands, subsurface and vertical flow constructed wetlands, land treatment, sludge management, and onsite wastewater systems. The book illustrates practical aspects through numerous examples and data tables.

CRC Press
March 2014 : 552pp
Hb: 978-1-466-58326-9 : **£190**
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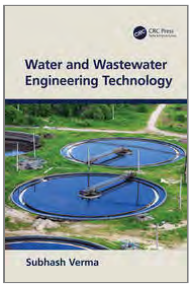
Water and Wastewater Engineering Technology



Subhash Verma Sault College of Applied Arts and Technology, Canada

Water and Wastewater Engineering Technology presents the basic concepts and applications of water and wastewater engineering and technology. It is primarily designed for students pursuing programs in civil, water resources, and environmental engineering, and presents the fundamentals of water technology, hydraulics, chemistry, and biology. The material lays the foundation for typical one-semester courses in water engineering and also serves as a valuable resource to professionals operating and managing water and wastewater treatment plants.

CRC Press
July 2023 : 580pp
Hb: 978-1-032-39005-5 : **£100**
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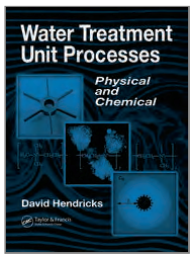
Water Treatment Unit Processes

Physical and Chemical



David W. Hendricks Colorado State University, Fort Collins, USA

Series: Civil and Environmental Engineering

Unit processes comprise the components of a treatment train used to remove contaminants from water. An understanding of these processes provides the foundation for continued learning and for designing treatment systems. The principles of unit processes also apply to ambient environmental contexts, such as transport of groundwater contaminants and stream pollution. Unit process theory is one of the core areas of an environmental engineering curriculum, and is important for the design of water treatment systems. This text provides grounding in the underlying principles of unit processes in a comprehensive approach that links theory to practice, suitable for a two-semester environmental engineering course.

CRC Press
January 2006 : 1314pp
Hb: 978-0-824-70695-1 : **£160**
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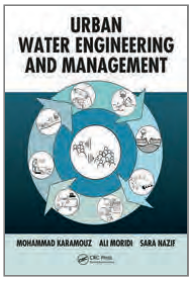
Urban Water Engineering and Management



Mohammad Karamouz Polytechnic Institute of New York University, Brooklyn, USA**, Ali Moridi** Tarbiat Modarres University, Tehran, Iran**, Sara Nazif** Polytechnic Institute of New York University, New York, USA, and University of Tehran, Iran

Based on the latest developments research, this book delineates a systems approach urban water hydrology, engineering, planning, and management. It covers a range of classic urban water management issues such as the modeling of urban water cycles, urban water supply and distribution systems, demand forecasting, wastewater and storm water collection and treatment.

CRC Press
January 2010 : 628pp
Hb: 978-1-439-81310-2 : **£140**
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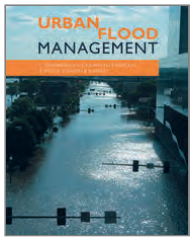
Urban Flood Management



Chris Zevenbergen , Adrian Cashman University of Sheffield, UK**, Niki Evelpidou** University of Athens, Greece**, Erik Pasche** Hamburg University of Technology, Germany**, Stephen Garvin , Richard Ashley** Pennine Water Group, Sheffield, UK

Along with windstorms, floods are the most common and widespread of all natural disasters. As flood events appear to be rapidly increasing worldwide, an advanced and universal approach to urban floods and how to manage them will help reduce flood impact. This textbook integrates the expertise from disciplines such as hydrology, sociology, architecture, urban design, construction and water resources engineering. The subject is approached from an international perspective and various case studies, exercises, expert advises and literature recommendations are included to support the theory and illustrations. Intended for urban flood management education of students in aforementioned disciplines at university level; also for professional reference. Supporting website available.

CRC Press
September 2010 : 340pp
Pb: 978-0-415-55944-7 : £110
eBook: 978-0-429-10971-3
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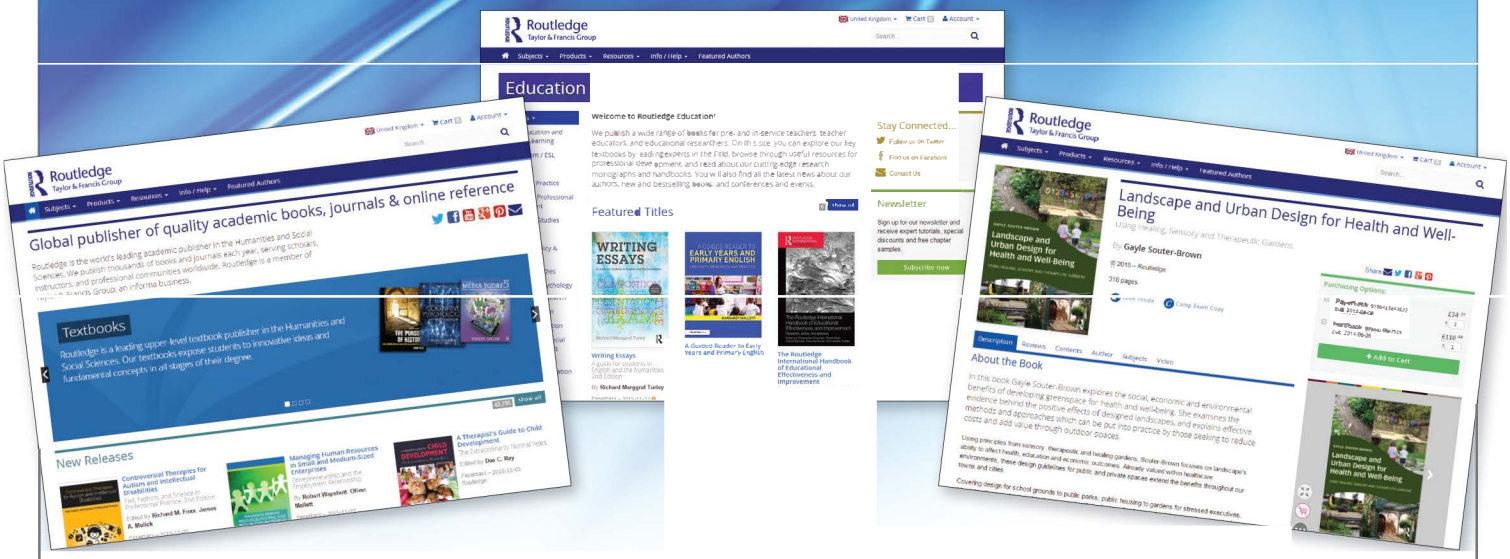

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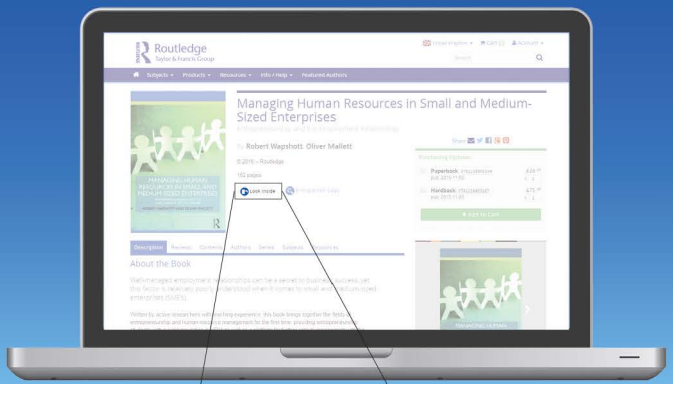

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