

Principles Of Environmental Engineering Science By Mackenzie Davis

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MWH's Water Treatment - John C. Crittenden
2012-06-14

the definitive guide to the theory and practice of water treatment engineering THIS NEWLY REVISED EDITION of the classic reference provides complete, up-to-date coverage of both theory and practice of water treatment system design. The Third Edition brings the field up to date, addressing new regulatory requirements, ongoing environmental concerns, and the emergence of pharmacological agents and other new chemical constituents in water. Written by some of the foremost experts in the field of public water supply, *Water Treatment, Third Edition* maintains the book's broad scope and reach, while reorganizing the material for even greater clarity and readability. Topics span from the fundamentals of water chemistry and microbiology to the latest methods for detecting constituents in water, leading-edge technologies for implementing water treatment processes, and the increasingly important topic of managing residuals from water treatment plants. Along with hundreds of illustrations, photographs, and extensive tables listing chemical properties and design data, this volume: Introduces a number of new topics such as advanced oxidation and enhanced coagulation Discusses treatment strategies for removing pharmaceuticals and personal care products Examines advanced treatment technologies such as membrane filtration, reverse osmosis, and

ozone addition Details reverse osmosis applications for brackish groundwater, wastewater, and other water sources Provides new case studies demonstrating the synthesis of full-scale treatment trains A must-have resource for engineers designing or operating water treatment plants, *Water Treatment, Third Edition* is also useful for students of civil, environmental, and water resources engineering.

Biochar for Environmental Management - Johannes Lehmann 2012-05-16

Biochar is the carbon-rich product when biomass (such as wood, manure or crop residues) is heated in a closed container with little or no available air. It can be used to improve agriculture and the environment in several ways, and its stability in soil and superior nutrient-retention properties make it an ideal soil amendment to increase crop yields. In addition to this, biochar sequestration, in combination with sustainable biomass production, can be carbon-negative and therefore used to actively remove carbon dioxide from the atmosphere, with major implications for mitigation of climate change. Biochar production can also be combined with bioenergy production through the use of the gases that are given off in the pyrolysis process. This book is the first to synthesize the expanding research literature on this topic. The book's interdisciplinary approach, which covers engineering, environmental

sciences, agricultural sciences, economics and policy, is a vital tool at this stage of biochar technology development. This comprehensive overview of current knowledge will be of interest to advanced students, researchers and professionals in a wide range of disciplines.

Teaching Engineering, Second Edition - Phillip C. Wankat 2015-01-15

The majority of professors have never had a formal course in education, and the most common method for learning how to teach is on-the-job training. This represents a challenge for disciplines with ever more complex subject matter, and a lost opportunity when new active learning approaches to education are yielding dramatic improvements in student learning and retention. This book aims to cover all aspects of teaching engineering and other technical subjects. It presents both practical matters and educational theories in a format useful for both new and experienced teachers. It is organized to start with specific, practical teaching applications and then leads to psychological and educational theories. The "practical orientation" section explains how to develop objectives and then use them to enhance student learning, and the "theoretical orientation" section discusses the theoretical basis for learning/teaching and its impact on students. Written mainly for PhD students and professors in all areas of engineering, the book may be used as a text for graduate-level classes and professional workshops or by professionals who wish to read it on their own. Although the focus is engineering education, most of this book will be useful to teachers in other disciplines. Teaching is a complex human activity, so it is impossible to develop a formula that guarantees it will be excellent. However, the methods in this book will help all professors become good teachers while spending less time preparing for the classroom. This is a new edition of the well-received volume published by McGraw-Hill in 1993. It includes an entirely revised section on the Accreditation Board for Engineering and Technology (ABET) and new sections on the characteristics of great teachers, different active learning methods, the application of technology in the classroom (from clickers to intelligent tutorial systems), and how people learn.

Hydraulic Structures - P. Novak 2017-12-21

Now includes Worked Examples for lecturers in a companion pdf! The fourth edition of this volume presents design principles and practical guidance for key hydraulic structures. Fully revised and updated, this new edition contains enhanced texts and sections on: environmental issues and the World Commission on Dams partially saturated soils, small amenity dams, tailing dams, upstream dam face protection and the rehabilitation of embankment dams RCC dams and the upgrading of masonry and concrete dams flow over stepped spillways and scour in plunge pools cavitation, aeration and vibration of gates risk analysis and contingency planning in dam safety small hydroelectric power development and tidal and wave power wave statistics, pipeline stability, wave-structure interaction and coastal modelling computational models in hydraulic engineering. The book's key topics are explored in two parts - dam engineering and other hydraulic structures - and the text concludes with a chapter on models in hydraulic engineering. Worked numerical examples supplement the main text and extensive lists of references conclude each chapter. Hydraulic Structures provides advanced students with a solid foundation in the subject and is a useful reference source for researchers, designers and other professionals.

Environmental Principles and Policies - Sharon Beder 2013-11-05

Environmental Principles and Policies uses environmental and social principles to analyse the latest wave of economic-based and market-orientated environmental policies currently being adopted around the world. This book provides an in-depth examination of six key principles that have been incorporated into international treaties and the national laws of many countries: * ecological sustainability * the polluter pays principle * the precautionary principle * equity * human rights * public participation These principles are then used to evaluate a range of policies including pollution charges, emissions, trading, water markets, biodiversity banks and tradable fishing rights. Environmental Principles and Policies is easily accessible, using non-technical language throughout, and - in what sets it apart from other books on environmental policy-making - it takes a critical and interdisciplinary approach. It

does not set out policies in a descriptive or prescriptive way, but analyses and evaluates policy options from a variety of perspectives. This enables readers to gain a thorough grasp of important principles and current policies, as well as demonstrating how principles can be used to critically assess environmental policies.

Social Science Research - Anol Bhattacharjee
2012-04-01

This book is designed to introduce doctoral and graduate students to the process of conducting scientific research in the social sciences, business, education, public health, and related disciplines. It is a one-stop, comprehensive, and compact source for foundational concepts in behavioral research, and can serve as a stand-alone text or as a supplement to research readings in any doctoral seminar or research methods class. This book is currently used as a research text at universities on six continents and will shortly be available in nine different languages.

Environmental Engineering - James R. Mihelcic
2014-01-13

Environmental Engineering: Fundamentals, Sustainability, Design presents civil engineers with an introduction to chemistry and biology, through a mass and energy balance approach. ABET required topics of emerging importance, such as sustainable and global engineering are also covered. Problems, similar to those on the FE and PE exams, are integrated at the end of each chapter. Aligned with the National Academy of Engineering's focus on managing carbon and nitrogen, the 2nd edition now includes a section on advanced technologies to more effectively reclaim nitrogen and phosphorous. Additionally, readers have immediate access to web modules, which address a specific topic, such as water and wastewater treatment. These modules include media rich content such as animations, audio, video and interactive problem solving, as well as links to explorations. Civil engineers will gain a global perspective, developing into innovative leaders in sustainable development.

MATLAB Programming for Engineers - Stephen J. Chapman 2007

Emphasizing problem-solving skills throughout this very successful book, Stephen Chapman introduces the MATLAB® language and shows

how to use it to solve typical technical problems. The book teaches MATLAB® as a technical programming language showing students how to write clean, efficient, and well-documented programs. It makes no pretense at being a complete description of all of MATLAB®'s hundreds of functions. Instead, it teaches students how to locate any desired function with MATLAB®'s extensive on line help facilities. Overall, students develop problem-solving skills and are equipped for future courses and careers using the power of MATLAB®.

Principles of Environmental Engineering and Science - Susan J. Masten 2019

This text is well-suited for a course in introductory environmental engineering for sophomore, or junior level students. The emphasis is on concepts, definitions, descriptions, and abundant illustrations, rather than on engineering design detail.

Geotechnical Engineering - Jean-Louis Briaud
2013-10-02

Written by a leader on the subject, Introduction to Geotechnical Engineering is first introductory geotechnical engineering textbook to cover both saturated and unsaturated soil mechanics. Destined to become the next leading text in the field, this book presents a new approach to teaching the subject, based on fundamentals of unsaturated soils, and extending the description of applications of soil mechanics to a wide variety of topics. This groundbreaking work features a number of topics typically left out of undergraduate geotechnical courses.

The Theory and Practice of Sustainable Engineering - Braden R. Allenby 2014-09-10

The Theory and Practice of Sustainable Engineering is appropriate to use in sustainable engineering classes for both majors and non-majors. This textbook was designed as the basis for a course in itself, but it can be used to provide modules in existing courses, or as a supplementary text in sustainable engineering, green engineering, industrial ecology, sustainability law and policy, and environmental courses. Sustainable engineering is learning how to engineer responsibly and professionally in the Anthropocene: the Age of the Human. This textbook sketches out the cultural, social, institutional, and environmental context within which engineering and, more broadly,

technology systems are now situated. It provides frameworks to facilitate understanding, communication, and the solving of highly complex problems with significant technological dimensions — all in the name of generating more capable professionals competent in their chosen field, who are able to integrate other disciplines to address complex adaptive systems.

Integrated Solid Waste Management: Engineering Principles and Management Issues - George Tchobanoglous 1993

A junior/senior-level introductory text aimed at civil and environmental engineers taking a basic introduction to Solid Waste Management. The text includes the latest 1990-1991 laws and regulations.

Environmental Engineering Science - William W. Nazaroff 2000-11-20

This book covers the fundamentals of environmental engineering and applications in water quality, air quality, and hazardous waste management. It begins by describing the fundamental principles that serve as the foundation of the entire field of environmental engineering. Readers are then systematically reintroduced to these fundamentals in a manner that is tailored to the needs of environmental engineers, and that is not too closely tied to any specific application.

Principles of Environmental Engineering and Science - Mackenzie Leo Davis 2009

This text is well-suited for a course in introductory environmental engineering for sophomore, or junior level students. The emphasis is on concepts, definitions, descriptions, and abundant illustrations, rather than on engineering design detail.

Principles of Environmental Engineering and Science - Mackenzie Leo Davis 2013-02

Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. This text provides a background in fundamental science and engineering principles of environmental engineering for students who may or may not become environmental engineers. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broad range of environmental topics-including

risk management, water quality an treatment, air pollution, hazardous waste, solid waste, and ionizing radiation as well as discussion of relevant regulations and practices. The book also uses mass and energy balance as a tool for understanding environmental processes and solving environmetnal engineering problems. This new edition includes an optional chapter on Biology as well as a thorough updating of environmental standards and a discussion of how those standards are created.

Introduction to Environmental Engineering - Mackenzie Leo Davis 1999-09

This comprehensive new edition tackles the multiple aspects of environmental engineering, from solid waste disposal to air and noise pollution. It places a much-needed emphasis on fundamental concepts, definitions, and problem-solving while providing updated problems and discussion questions in each chapter.

Introduction to Environmental Engineering also includes a discussion of environmental legislation along with environmental ethics case studies and problems to present the legal framework that governs environmental engineering design.

Wastewater Engineering - METCALF & EDDY, Inc 1972

Development and trends in wastewater engineering;determination of sewage flowrates;hydraulics of sewers;design of sewers;sewer appurtenancesand special structures;pump and pumping stations;wastewater characteristics;physical unit operations;chemical unit processes;design of facilities for physical and chemical treatment of wastewater;design of facilities for biological treatment of wastewater;design of facilities fortreatment and disposal of sludge;advanced wastewater treatment;water-pollution control and effluent disposal;wastewater treatment studies.

Environmental Applications of Instrumental Chemical Analysis - Mahmood Barbooti 2015-04-15

This book is a comprehensive review of the instrumental analytical methods and their use in environmental monitoring site assessment and remediation follow-up operations. The increased concern about environmental issues such as water pollution, air pollution, accumulation of

pollutants in food, global climate change, and effective remediation processes necessitate the precise determination of various types of chemicals in environmental samples. In general, all stages of environmental work start with the evaluation of organic and inorganic environmental samples. This important book furnishes the fundamentals of instrumental chemical analysis methods to various environmental applications and also covers recent developments in instrumental chemical methods. Covering a wide variety of topics in the field, the book:

- Presents an introduction to environmental chemistry
- Presents the fundamentals of instrumental chemical analysis methods that are used mostly in the environmental work.
- Examines instrumental methods of analysis including UV/Vis, FTIR, atomic absorption, induced coupled plasma emission, electrochemical methods like potentiometry, voltametry, coulometry, and chromatographic methods such as GC and HPLC
- Presents newly introduced chromatographic methodologies such as ion electrophoresis, and combinations of chromatography with pyrolysis methods are given
- Discusses selected methods for the determinations of various pollutants in water, air, and land

Readers will gain a general review of modern instrumental method of chemical analysis that is useful in environmental work and will learn how to select methods for analyzing certain samples. Analytical instrumentation and its underlying principles are presented, along with the types of sample for which each instrument is best suited. Some noninstrumental techniques, such as colorimetric detection tubes for gases and immunoassays, are also discussed.

Fostering Sustainable Behavior - Doug McKenzie-Mohr 2013-10-18

The highly acclaimed manual for changing everyday habits--now in an all-new third edition!

The Advocacy - Melissa Fischer 2019-11-05

Drawn from her own experience as a Peace Corps Volunteer in Ghana, Melissa Fischer weaves a rich tale set in 1992, Obuasi, a mining boomtown. The gold mine, West Africa Gold, dams the Gyimi River, stagnating the water source of Gyimiso Kakraba, a village of subsistence farmers who refuse to accept a modern world that has forsaken the art of

human connection. The Advocacy portrays with unsparing detail the reality of this era in Ghana's history, as well as this moment in the evolution of the dialogue between indigenous communities and transnational extractive industrialists.

Fischer provides a rare and intimate view of a broad cross-section of Ghanaian society and the inner workings of a multinational mining corporation. The Advocacy's protagonist, Louisa Lehmann, is a gritty and opinionated civil engineer who has returned to Africa from the U.S. to reconcile her past. Louisa exudes pride in her profession, honors her fluid gender, and yields to the greatest lesson of all, taught by the people of Gyimiso Kakraba deep in Ghana's equatorial forest.

Water, Energy, and Environment - A Primer - Allan R. Hoffman 2019-02-15

'We are experiencing the beginning of an energy revolution in these early years of the 21st century.' *Water, Energy, and Environment - A Primer* provides an introduction to, and explanation of, this revolution.

Hydrology for Engineers, Geologists, and Environmental Professionals - Sergio E. Serrano 2010

Hydrology for Engineers, Geologists and Environmental Professionals presents the fundamental concepts of physical and contaminant hydrology in watersheds, rivers, lakes, soils, and aquifers in an easy and accessible manner to the environmental professional. Recent research developments in nonlinear hydrologic science and new meshless simulation methods are included in this edition: new solutions of nonlinear infiltration; modeling of regional groundwater flow in heterogeneous media, irregularly-shaped domains, transient problems, multiple pumping wells, and nonlinear flow; contaminant transport simulation under nonlinear decay, nonlinear sorption, and unsaturated-saturated zones contaminant propagation. This edition includes 124 solved examples, 187 proposed problems, 153 illustrations, 71 tables, 46 short computer programs, answers to problems, and extensive bibliography.

Environmental Engineering and Computer Application - Kennis Chan 2015-07-27

The awareness of environment protection is a great achievement of humans; an expression of

self-awareness. Even though the idea of living while protecting the environment is not new, it has never been so widely and deeply practiced by any nations in history like it is today. From the late 90s in the last century, the surprisingly fast dev

Water and Wastewater Engineering: Design Principles and Practice, Second Edition -

Mackenzie L. Davis 2019-10-04

Publisher's Note: Products purchased from Third Party sellers are not guaranteed by the publisher for quality, authenticity, or access to any online entitlements included with the product. A Fully Updated, In-Depth Guide to Water and Wastewater Engineering Thoroughly revised to reflect the latest advances, procedures, and regulations, this authoritative resource contains comprehensive coverage of the design and construction of municipal water and wastewater facilities. Written by an environmental engineering expert and seasoned academic, *Water and Wastewater Engineering: Design Principles and Practice, Second Edition*, offers detailed explanations, practical strategies, and design techniques as well as hands-on safety protocols and operation and maintenance procedures. You will get cutting-edge information on water quality standards, corrosion control, piping materials, energy efficiency, direct and indirect potable reuse, and more. Coverage includes:

- The design and construction processes
- General water supply design considerations
- Intake structures and wells
- Chemical handling and storage
- Coagulation and flocculation
- Lime-soda and ion exchange softening
- Reverse osmosis and nanofiltration
- Sedimentation
- Granular and membrane filtration
- Disinfection and fluoridation
- Removal of specific constituents
- Water plant residuals management, process selection, and integration
- Storage and distribution systems
- Wastewater collection and treatment design considerations
- Sanitary sewer design
- Headworks and preliminary treatment
- Primary treatment
- Wastewater microbiology
- Secondary treatment by suspended growth biological processes
- Secondary treatment by attached growth and hybrid biological processes
- Tertiary treatment
- Advanced oxidation processes
- Direct and indirect potable reuse

Electrochemical Biosensors - Serge Cosnier 2015-01-26

Since four decades, rapid detection and monitoring in clinical and food diagnostics and in environmental and biodefense have paved the way for the elaboration of electrochemical biosensors. Thanks to their adaptability, ease of use in relatively complex samples, and their portability, electrochemical biosensors now are one of the mainstays of analytical chemistry. In particular, electrochemistry has played a pivotal role in the development of transduction methods for biological processes and biosensors. In parallel, the explosion of activity in nanoscience and nanotechnology and their huge success have profoundly affected biosensor technology, opening new avenues of research for electrode materials and transduction. This book provides an overview of biosensors based on amperometry, conductimetry, potentiometry, square-wave voltammetry, impedance, and electrochemiluminescence and describes the use of ultramicroelectrodes for the real-time monitoring and understanding of exocytosis. Areas of particular interest are the use of silver and gold nanoparticles for signal amplification, photocurrent transduction, and aptamer design. Moreover, advanced insights in the innovative concept of self-powered biosensors derived from biofuel cells are also discussed.

Occupancy Estimation and Modeling - Darryl I. MacKenzie 2017-11-17

Occupancy Estimation and Modeling: Inferring Patterns and Dynamics of Species Occurrence, Second Edition, provides a synthesis of model-based approaches for analyzing presence-absence data, allowing for imperfect detection. Beginning from the relatively simple case of estimating the proportion of area or sampling units occupied at the time of surveying, the authors describe a wide variety of extensions that have been developed since the early 2000s. This provides an improved insight about species and community ecology, including, detection heterogeneity; correlated detections; spatial autocorrelation; multiple states or classes of occupancy; changes in occupancy over time; species co-occurrence; community-level modeling, and more. *Occupancy Estimation and Modeling: Inferring Patterns and Dynamics of Species Occurrence, Second Edition* has been

greatly expanded and detail is provided regarding the estimation methods and examples of their application are given. Important study design recommendations are also covered to give a well rounded view of modeling. Provides authoritative insights into the latest in occupancy modeling Examines the latest methods in analyzing detection/no detection data surveys Addresses critical issues of imperfect detectability and its effects on species occurrence estimation Discusses important study design considerations such as defining sample units, sample size determination and optimal effort allocation

Water and Wastewater Engineering - Mackenzie L Davis 2010-04-05

An In-Depth Guide to Water and Wastewater Engineering This authoritative volume offers comprehensive coverage of the design and construction of municipal water and wastewater facilities. The book addresses water treatment in detail, following the flow of water through the unit processes and coagulation, flocculation, softening, sedimentation, filtration, disinfection, and residuals management. Each stage of wastewater treatment--preliminary, secondary, and tertiary--is examined along with residuals management. Water and Wastewater Engineering contains more than 100 example problems, 500 end-of-chapter problems, and 300 illustrations. Safety issues and operation and maintenance procedures are also discussed in this definitive resource. Coverage includes: Intake structures and wells Chemical handling and storage Coagulation and flocculation Lime-soda and ion exchange softening Reverse osmosis and nanofiltration Sedimentation Granular and membrane filtration Disinfection and fluoridation Removal of specific constituents Drinking water plant residuals management, process selection, and integration Storage and distribution systems Wastewater collection and treatment design considerations Sanitary sewer design Headworks and preliminary treatment Primary treatment Wastewater microbiology Secondary treatment by suspended and attached growth biological processes Secondary settling, disinfection, and postaeration Tertiary treatment Wastewater plant residuals management Clean water plant process selection and integration

Water Quality & Treatment: A Handbook on

Drinking Water - American Water Works Association 2010-12-06

The definitive water quality and treatment resource--fully revised and updated Comprehensive, current, and written by leading experts, *Water Quality & Treatment: A Handbook on Drinking Water*, Sixth Edition covers state-of-the-art technologies and methods for water treatment and quality control.

Significant revisions and new material in this edition reflect the latest advances and critical topics in water supply and treatment. Presented by the American Water Works Association, this is the leading source of authoritative information on drinking water quality and treatment. NEW CHAPTERS ON: Chemical principles, source water composition, and watershed protection Natural treatment systems Water reuse for drinking water augmentation Ultraviolet light processes Formation and control of disinfection by-products DETAILED COVERAGE OF:

Drinking water standards, regulations, goals, and health effects Hydraulic characteristics of water treatment reactors Gas-liquid processes and chemical oxidation Coagulation, flocculation, sedimentation, and flotation Granular media and membrane filtration Ion exchange and adsorption of inorganic contaminants Precipitation, coprecipitation, and precipitative softening Adsorption of organic compounds by activated carbon Chemical disinfection Internal corrosion and deposition control Microbiological quality control in distribution systems Water treatment plant residuals management

Your Health Today: Choices in a Changing Society - MICHAEL. MACKENZIE TEAGUE (SARA. ROSENTHAL, DAVID.) 2018-10

Principles of Water Treatment - Kerry J. Howe 2012-11-06

Principles of Water Treatment has been developed from the best selling reference work *Water Treatment*, 3rd edition by the same author team. It maintains the same quality writing, illustrations, and worked examples as the larger book, but in a smaller format which focuses on the treatment processes and not on the design of the facilities.

Studyguide for Principles of Environmental Engineering and Science by Davis,

MacKenzie L. - Cram101 Textbook Reviews
2013-05

Never HIGHLIGHT a Book Again Includes all testable terms, concepts, persons, places, and events. Cram101 Just the FACTS101 studyguides gives all of the outlines, highlights, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanies: 9780872893795. This item is printed on demand.

Professional Communications - Heather Silyn-Roberts 2005

Heather Silyn-Roberts provides practical, comprehensive advice on best practice for professional engineering communications that convey information to readers accurately and simply.

Nanoscale Zerovalent Iron Particles for Environmental Restoration - Tanapon Phenrat
2019-01-31

This is the first complete edited volume devoted to providing comprehensive and state-of-the art descriptions of science principles and pilot- and field-scaled engineering applications of nanoscale zerovalent iron particles (NZVI) for soil and groundwater remediation. Although several books on environmental nanotechnology contain chapters of NZVI for environmental remediation (Wiesner and Bottero (2007); Geiger and Carvalho-Knighton (2009); Diallo et al. (2009); Ram et al. (2011)), none of them include a comprehensive treatment of the fundamental and applied aspects of NZVI applications. Most devote a chapter or two discussing a contemporary aspect of NZVI. In addition, environmental nanotechnology has a broad audience including environmental engineers and scientists, geochemists, material scientists, physicists, chemists, biologists, ecologists and toxicologists. None of the current books contain enough background material for such multidisciplinary readers, making it difficult for a graduate student or even an experienced researcher or environmental remediation practitioner new to nanotechnology to catch up with the massive, undigested literature. This prohibits the reader from gaining a complete understanding of NZVI science and technology. In this volume, the sixteen chapters are based on more than two decades of laboratory research

and development and field-scaled demonstrations of NZVI implementation. The authors of each chapter are leading researchers and/or practitioners in NZVI technology. This book aims to be an important resource for all levels of audiences, i.e. graduate students, experienced environmental and nanotechnology researchers, and practitioners evaluating environmental remediation, as it is designed to involve everything from basic to advanced concepts.

Hughes Electrical Technology - Edward Hughes 1995-01-01

Covering the fundamentals of electrical technology and using these to introduce the application of electrical and electronic systems, this text had been updated to include recent developments in technology. It avoids unnecessary mathematics and features improved teaching aids, including: worked examples; updated and graded review questions; colour diagrams and chapter summaries. It is designed for use by students on NC, HNC and HND courses in electrical and electronic engineering.

Ecological Engineering - Patrick Kangas
2003-09-25

Less expensive and more environmentally appropriate than conventional engineering approaches, constructed ecosystems are a promising technology for environmental problem solving. Undergraduates, graduate students, and working professionals need an introductory text that details the biology and ecology of this rapidly developing discipline, known as Selecting International Judges - Ruth Mackenzie
2010-06-17

International courts are called upon to decide upon an increasingly wide range of issues of global importance, yet public knowledge of international judges and the process by which they are appointed remains very limited. Drawing on extensive empirical research, this book explains how the judges who sit on international courts are selected.

Principles of Environmental Engineering & Science - Mackenzie Davis 2008-01-22

Principles of Environmental Engineering is intended for a course in introductory environmental engineering for sophomore- or junior-level students. This text provides a background in fundamental science and

engineering principles of environmental engineering for students who may or may not become environmental engineers. Principles places more emphasis on scientific principles, ethics, and safety, and focuses less on engineering design. The text exposes students to a broad range of environmental topics—including risk management, water quality an treatment, air pollution, hazardous waste, solid waste, and ionizing radiation as well as discussion of relevant regulations and practices. The book also uses mass and energy balance as a tool for understanding environmental processes and solving environmetnal engineering problems. This new edition includes an optional chapter on Biology as well as a thorough updating of environmental standards and a discussion of how those standards are created.

Causal Analytics for Applied Risk Analysis - Louis Anthony Cox Jr. 2018-06-19

Causal analytics methods can revolutionize the use of data to make effective decisions by revealing how different choices affect probabilities of various outcomes. This book presents and illustrates models, algorithms, principles, and software for deriving causal models from data and for using them to optimize decisions with uncertain outcomes. It discusses how to describe and summarize situations; detect changes; evaluate effects of policies or interventions; learn what works best under different conditions; predict values of as-yet unobserved quantities from available data; and identify the most likely explanations for observed outcomes, including surprises and anomalies. The book resents practical techniques for causal modeling and analytics that practitioners can apply to improve understanding of how choices affect probabilities of consequences and, based on this understanding, to recommend choices that are more likely to accomplish their intended objectives. The book begins with a survey of modern analytics methods, focusing mainly on techniques useful for decision, risk, and policy analysis. Chapter 2 introduces free in-browser software, including the Causal Analytics Toolkit (CAT) software, to enable readers to perform the analyses described and to apply modern analytics methods easily to their own data sets.

Chapters 3 through 11 show how to apply causal analytics and risk analytics to practical risk analysis challenges, mainly related to public and occupational health risks from pathogens in food or from pollutants in air. Chapters 12 through 15 turn to broader questions of how to improve risk management decision-making by individuals, groups, organizations, institutions, and multi-generation societies with different cultures and norms for cooperation. These chapters examine organizational learning, community resilience, societal risk management, and intergenerational collaboration and justice in managing risks.

Water Resources and Hydraulics - Xixi Wang 2021-01-31

This exciting new textbook introduces the concepts and tools essential for upper-level undergraduate study in water resources and hydraulics. Tailored specifically to fit the length of a typical one-semester course, it will prove a valuable resource to students in civil engineering, water resources engineering, and environmental engineering. It will also serve as a reference textbook for researchers, practicing water engineers, consultants, and managers. The book facilitates students' understanding of both hydrologic analysis and hydraulic design. Example problems are carefully selected and solved clearly in a step-by-step manner, allowing students to follow along and gain mastery of relevant principles and concepts. These examples are comparable in terms of difficulty level and content with the end-of-chapter student exercises, so students will become well equipped to handle relevant problems on their own. Physical phenomena are visualized in engaging photos, annotated equations, graphical illustrations, flowcharts, videos, and tables.

Indigenous Water and Drought Management in a Changing World - Miguel Sioui 2022-05-27

Indigenous Water and Drought Management in a Changing World presents a series of global case studies that examine how different Indigenous groups are dealing with various water management challenges and finding creative and culturally specific ways of developing solutions to these challenges. With contributions from Indigenous and non-Indigenous academics, scientists, and water management experts, this volume provides an overview of key water

management challenges specific to Indigenous peoples, proposes possible policy solutions both at the international and national levels, and outlines culturally relevant tools for assessing vulnerability and building capacity. In recent decades, global climate change (particularly drought) has brought about additional water management challenges, especially in drought-prone regions where increasing average temperatures and diminishing precipitation are leading to water crises. Because their livelihoods are often dependent on the land and water, Indigenous groups native to those regions have direct insights into the localized impacts of global environmental change, and are increasingly developing their own adaptation and mitigation strategies and solutions based on local Indigenous knowledge (IK). Many

Indigenous groups around the globe are also faced with mounting pressure from extractive industries like mining and forestry, which further threaten their water resources. The various cases presented in *Indigenous Water and Drought Management in a Changing World* provide much-needed insights into the particular issues faced by Indigenous peoples in preserving their water resources, as well as actionable information that can inform future scientific research and policymaking aimed at developing more integrated, region-specific, and culturally relevant solutions to these critical challenges. Includes diverse case studies from around the world Provides cutting-edge perspectives about Indigenous peoples' water management issues and IK-based solutions Presents maps for most case studies along with a summary box to conclude each chapter