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Introduction to Environmental Engineering and Science *Appropriate for undergraduate engineering and science courses in Environmental Engineering. Balanced coverage of all the major categories of environmental pollution, with coverage of current topics such as climate change and ozone depletion, risk assessment, indoor air quality, source-reduction and recycling, and groundwater contamination. Introduction to Environmental Engineering and Science Introduction to Environmental Engineering Waveland Press Dr. Cooper's 35 years of university experience and his award-winning teaching style are evident in this highly readable, authoritative introduction to environmental engineering. Appropriate for all branches of engineering, this text presents fundamental knowledge in a logical, up-to-date manner, incorporating abundant examples with step-by-step solutions to illustrate key concepts. Central to Cooper's treatment is the use of material and energy balances to solve specific environmental engineering problems and to instill a problem-solving mind-set that will benefit readers throughout their careers. Introduction to Environmental Engineering offers an overview of the profession and reviews the math and science essential to environmental engineering practice. The comprehensive coverage includes water resources, drinking water treatment, wastewater treatment, air pollution control, solid and hazardous wastes, energy resources, risk assessment, indoor air quality, and noise pollution. Featuring more than 80 graphics, real-world examples, and extensive end-of-chapter problems (with selected answers), this volume is an outstanding choice for a first course in environmental engineering. Environmental Engineering Science John Wiley & Sons 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 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. Introduction to Environmental Engineering McGraw-Hill Science, Engineering & Mathematics 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. Green Sustainable Process for Chemical and Environmental Engineering and Science Solid State Synthetic Methods Elsevier Green Sustainable Process for Chemical and Environmental Engineering and Science: Solid State Synthetic Methods cover recent advances made in the field of solid-state materials synthesis and its various applications. The book provides a brief introduction to the topic and the fundamental principles governing the various methods. Sustainable techniques and green processes development in solid-state chemistry are also highlighted. This book also provides a comprehensive literature on the industrial application using solid-state materials and solid-state devices. Overall, this book is intended to explore green solid-state techniques, eco-friendly materials involved in organic synthesis and real-time applications. Provides a broad overview of solid-state chemistry Outlines an eco-friendly solid-state synthesis of modern nanomaterials, organometallic, coordination compounds and pure organic Gives a detailed account of solid-state chemistry, fundamentals, concepts, techniques and applications Deliberates cutting-edge recent advances in industrial technologies involved in energy, environmental, medicinal and organic chemistry fields Water Technology An Introduction for Scientists and Engineers Wiley Nick Gray is well known for both his texts and reference works on water technology, and he now brings his research and teaching expertise to this introductory student textbook. Written as a comprehensive and accessible introduction, Water Technology introduces the key concepts of hydrobiology, water treatment and supply, and wastewater treatment. Throughout the book the environmental impacts of policy and practice are assessed. The book: covers water quality and regulation, including European and US legislation and standards explains the fundamentals of hydrobiology and aquatic ecosystems deals with water quality assessment, management and treatment includes in-depth coverage of wastewater treatment and disposal is highly illustrated and includes numerous tables to help the reader Water Technology is essential reading for the environmental science or engineering student. Introduction to Environmental Science and Technology John Wiley & Sons Introduction to Environmental Remote Sensing Routledge Taking a detailed, non-mathematical approach to the principles on which remote sensing is based, this book progresses from the physical principles to the application of remote sensing. Soils and Environmental Quality CRC Press A perpetual bestseller, this third edition remains the obvious choice for those instructors who strive to make their teaching applicable to contemporary issues. The three authors, all teaching professors distinguished in soil science, have updated this student favorite to include a greater number of even more relevant topics. Responding to requests, they have also placed an increased emphasis on management issues. As with previous editions, the third edition offers students in soil or environmental science an overview of soil science, hydrology, atmospheric chemistry, and pollutant classification. The text moves from the theoretical to the practical with an abundance of contemporary examples, such as an exploration of allowable pesticide concentrations in drinking water and an inquiry into soil contamination from the trace elements in organic by-products. Also considered are the use of soil carbon sequestration as a remedy for global climate change, and the effects of acid precipitation on forestation. NEW TO THE THIRD EDITION: · New chapters on nutrient management planning, and the environmental testing of soil, plants, water, and air · Additional and revised case studies that continue to relate academic content to real-life situations, while inspiring students with real-life challenges to solve · Eight-page color inset · Direct encouragement and links to fully access the Internet as a resource for the most up-to-date findings Always Relevant, Always Interesting The text also covers environmentally-related current events, fostering discussion of the political, economic, and regulatory aspects of environmental issues, the human side of environmental problems, the use and misuse of the scientific method, and potential bias in the presentation of facts. Students in soil science, environmental science, chemistry, biology, geology, and other disciplines will gain valuable insight from this multifaceted text. Green Sustainable Process for Chemical and Environmental Engineering and Science Biosurfactants for the Bioremediation of Polluted Environments Elsevier Green Sustainable Process for Chemical and Environmental Engineering and Science: Biosurfactants for the Bioremediation of Polluted Environments explores the use of biosurfactants in remediation initiatives, reviewing knowledge surrounding the creation and application of biosurfactants for addressing issues related to the release of toxic substances in ecosystems. Sections cover their production, assessment and optimization for bioremediation, varied pollutant degradation applications, and a range of contaminants and ecological sites. As awareness and efforts to develop greener products and processes continues to grow, biosurfactants are garnering more attention for the potential roles they can play in reducing the use and production of more toxic products. Drawing on the knowledge of its expert team of global contributors, this book provides useful insights for all those currently or potentially interested in developing or applying biosurfactants in their own work. Provides an accessible introduction to biosurfactant chemistry Highlights the optimization, modeling, prediction and kinetics of key factors supporting biosurfactant-enhanced biodegradation processes Explores a wide range of biosurfactant applications for remediation and degradation of pollutants Reaction Mechanisms in Environmental Engineering Analysis and Prediction Butterworth-Heinemann Reaction Mechanisms in Environmental Engineering: Analysis and Prediction describes the principles that govern chemical reactivity and demonstrates how these principles are used to yield more accurate predictions. The book will help users increase accuracy in analyzing and predicting the speed of pollutant conversion in engineered systems, such as water and wastewater treatment plants, or in natural systems, such as lakes and aquifers receiving industrial pollution. Using examples from air, water and soil, the book begins with a clear exposition of the properties of environmental and inorganic organic chemicals that is followed by partitioning and sorption processes and sorption and transformation processes. Kinetic principles are used to calculate or estimate the pollutants' half-lives, while physical-chemical properties of organic pollutants are used to estimate transformation mechanisms and rates. The book emphasizes how to develop an understanding of how physico-chemical and structural properties relate to transformations of organic pollutants. Offers a one-stop source for analyzing and predicting the speed of organic and inorganic reaction mechanisms for air, water and soil Provides the tools and methods for increased accuracy in analyzing and predicting the speed of pollutant conversion in engineered systems Uses kinetic principles and the physical-chemical properties of organic pollutants to estimate transformation mechanisms and rates Encyclopedia of Environmental Science and Engineering Taylor & Francis First Published in 1992. Routledge is an imprint of Taylor & Francis, an informa company. Engineering Fundamentals: An Introduction to Engineering, SI Edition Cengage Learning Specifically designed as an introduction to the exciting world of engineering, ENGINEERING FUNDAMENTALS: AN INTRODUCTION TO ENGINEERING encourages students to become engineers and prepares them with a solid foundation in the fundamental principles and physical laws. The book begins with a discovery of what engineers do as well as an inside look into the various areas of specialization. An explanation on good study habits and what it takes to succeed is included as well as an introduction to design and problem solving, communication, and ethics. Once this foundation is established, the book moves on to the basic physical concepts and laws that students will encounter regularly. The framework of this text teaches students that engineers apply physical and chemical laws and principles as well as mathematics to design, test, and supervise the production of millions of parts, products, and services that people use every day. By gaining problem solving skills and an understanding of fundamental principles, students are on their way to becoming analytical, detail-oriented, and creative engineers. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. Chemical Fate and Transport in the Environment Elsevier The third edition of Chemical Fate and Transport in the Environment—winner of a 2015 Textbook Excellence Award (Texty) from The Text and Academic Authors Association—explains the fundamental principles of mass transport, chemical partitioning, and chemical/biological transformations in surface waters, in soil and groundwater, and in air. Each of these three major environmental media is introduced by descriptive overviews, followed by a presentation of the controlling physical, chemical, and biological processes. The text emphasizes intuitively based mathematical models for chemical transport and transformations in the environment, and serves both as a textbook for senior undergraduate and graduate courses in environmental science and engineering, and as a standard reference for environmental practitioners. Winner of a 2015 Texty Award from the Text and Academic Authors Association Includes many worked examples as well as extensive exercises at the end of each chapter Illustrates the interconnections and similarities among environmental media through its coverage of surface waters, the subsurface, and the atmosphere Written and organized concisely to map to a single-semester course Discusses and builds upon fundamental concepts, ensuring that the material is accessible to readers who do not have an extensive background in environmental science Introduction to Environmental Engineering Prentice Hall In Introduction to Environmental Engineering, First Edition, authors Richard Mines and Laura Lackey explain complicated environmental systems in easy-to-understand terms, providing numerous examples and an emphasis on current environmental issues such as global warming, the failing infrastructure within the United States, risk assessment, and hazardous waste remediation. KEY TOPICS: Environmental Engineering as a Profession; Introduction to Environmental Engineering Calculations: Dimensions, Units, and Conversions; Essential Chemical Concepts; Biological and Ecological Concepts; Risk Assessment; Design and Modeling of Environmental Systems; Sustainability and Green Development; Water Quality and Pollution; Water Treatment; Domestic Wastewater Treatment; Air Pollution; Fundamentals of Hazardous Waste Site Remediation; Introduction to Solid Waste Management. MARKET: Appropriate for engineers interested in a comprehensive and up-to-date introduction to environmental engineering. Principles of Environmental Engineering and Science Irwin/McGraw-Hill 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. Risk, Reliability and Sustainable Remediation in the Field of Civil and Environmental Engineering Elsevier Risk, Reliability and Sustainable Remediation in the Field of Civil and Environmental Engineering illustrates the concepts of risk, reliability analysis, its estimation, and the decisions leading to sustainable development in the field of civil and environmental engineering. The book provides key ideas on risks in performance failure and structural failures of all processes involved in civil and environmental systems, evaluates reliability, and discusses the implications of measurable indicators of sustainability in important aspects of multitude of civil engineering projects. It will help practitioners become familiar with tolerances in design parameters, uncertainties in the environment, and applications in civil and environmental systems. Furthermore, the book emphasizes the importance of risks involved in design and planning stages and covers reliability techniques to discover and remove the potential failures to achieve a sustainable development. Contains relevant theory and practice related to risk, reliability and sustainability in the field of civil and environment*

engineering Gives firsthand experience of new tools to integrate existing artificial intelligence models with large information obtained from different sources Provides engineering solutions that have a positive impact on sustainability **Green Sustainable Process for Chemical and Environmental Engineering and Science Plant-Derived Green Solvents: Properties and Applications Elsevier** Green Sustainable Process for Chemical and Environmental Engineering and Science: Plant-Derived Green Solvents: Properties and Applications provide a comprehensive review on the green solvents such as bio solvents, terpenes, neem, alkyl phenols, cyrene, limenone, and ethyl lactate, etc. which are derived from plant sources. Chapters discuss introduction, properties, and advantages to the practical use of plant-derived solvents. Plants-derived solvents are an excellent choice for real-world applications to reduce the environmental and health safety considerations. This book is the result of commitments by top researchers in the field of biosolvents from various backgrounds and fields of expertise. This book is a one-stop reference for plant solvents and overviews up-to-date accounts in the field of modern applications and the first book in this research community. Introduces properties and application of green solvents from plants Gives an in-depth accounts on plant-derived solvents for various applications Outlines the benefits and possibilities of plant-derived solvents vs conventional solvents Outlines eco-friendly green solvents synthesis, properties and applications Key references to obtain great results in plant-derived green solvents **Environmental Pollution and Control Butterworth-Heinemann** Complex environmental problems are often reduced to an inappropriate level of simplicity. While this book does not seek to present a comprehensive scientific and technical coverage of all aspects of the subject matter, it makes the issues, ideas, and language of environmental engineering accessible and understandable to the nontechnical reader. Improvements introduced in the fourth edition include a complete rewrite of the chapters dealing with risk assessment and ethics, the introduction of new theories of radiation damage, inclusion of environmental disasters like Chernobyl and Bhopal, and general updating of all the content, specifically that on radioactive waste. Since this book was first published in 1972, several generations of students have become environmentally aware and conscious of their responsibilities to the planet earth. Many of these environmental pioneers are now teaching in colleges and universities, and have in their classes students with the same sense of dedication and resolve that they themselves brought to the discipline. In those days, it was sometimes difficult to explain what indeed environmental science or engineering was, and why the development of these fields was so important to the future of the earth and to human civilization. Today there is no question that the human species has the capability of destroying its collective home, and that we have indeed taken major steps toward doing exactly that. And yet, while, a lot has changed in a generation, much has not. We still have air pollution; we still contaminate our water supplies; we still dispose of hazardous materials improperly; we still destroy natural habitats as if no other species mattered. And worst of all, we still continue to populate the earth at an alarming rate. There is still a need for this book, and for the college and university courses that use it as a text, and perhaps this need is more acute now than it was several decades ago. Although the battle to preserve the environment is still raging, some of the rules have changed. We now must take into account risk to humans, and be able to manipulate concepts of risk management. With increasing population, and fewer alternatives to waste disposal, this problem is intensified. Environmental laws have changed, and will no doubt continue to evolve. Attitudes toward the environment are often couched in what has become known as the environmental ethic. Finally, the environmental movement has become powerful politically, and environmentalism can be made to serve a political agenda. In revising this book, we have attempted to incorporate the evolving nature of environmental sciences and engineering by adding chapters as necessary and eliminating material that is less germane to today's students. We have nevertheless maintained the essential feature of this book -- to package the more important aspects of environmental engineering science and technology in an organized manner and present this mainly technical material to a nonengineering audience. This book has been used as a text in courses which require no prerequisites, although a high school knowledge of chemistry is important. A knowledge of college level algebra is also useful, but calculus is not required for the understanding of the technical and scientific concepts. We do not intend for this book to be scientifically and technically complete. In fact, many complex environmental problems have been simplified to the threshold of pain for many engineers and scientists. Our objective, however, is not to impress nontechnical students with the rigors and complexities of pollution control technology but rather to make some of the language and ideas of environmental engineering and science more understandable. **Biogeochemistry An Analysis of Global Change Academic Press** "Biogeochemistry considers how the basic chemical conditions of the Earth--from atmosphere to soil to seawater--have been and are being affected by the existence of life. Human activities in particular, from the rapid consumption of resources to the destruction of the rainforests and the expansion of smog-covered cities, are leading to rapid changes in the basic chemistry of the Earth. This expansive text pulls together the numerous fields of study encompassed by biogeochemistry to analyze the increasing demands of the growing human population on limited resources and the resulting changes in the planet's chemical makeup. The book helps students extrapolate small-scale examples to the global level, and also discusses the instrumentation being used by NASA and its role in studies of global change. With extensive cross-referencing of chapters, figures and tables, and an interdisciplinary coverage of the topic at hand, this updated edition provides an excellent framework for courses examining global change and environmental chemistry, and is also a useful self-study guide."--Publisher's website. **Introduction to Environmental Forensics Academic Press** The third edition of Introduction to Environmental Forensics is a state-of-the-art reference for the practicing environmental forensics consultant, regulator, student, academic, and scientist, with topics including compound-specific isotope analysis (CSIA), advanced multivariate statistical techniques, surrogate approaches for contaminant source identification and age dating, dendroecology, hydrofracking, releases from underground storage tanks and piping, and contaminant-transport modeling for forensic applications. Recognized international forensic scientists were selected to author chapters in their specific areas of expertise and case studies are included to illustrate the application of these methods in actual environmental forensic investigations. This edition provides updates on advances in various techniques and introduces several new topics. Provides a comprehensive review of all aspects of environmental forensics Coverage ranges from emerging statistical methods to state-of-the-art analytical techniques, such as gas chromatography-combustion-isotope ratio mass spectrometry and polytopic vector analysis Numerous examples and case studies are provided to illustrate the application of these forensic techniques in environmental investigations **Water and Wastewater Engineering McGraw Hill Professional 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 **Materials and the Environment Eco-informed Material Choice Butterworth-Heinemann** Addressing the growing global concern for sustainable engineering, Materials and the Environment, 2e is the only book devoted exclusively to the environmental aspects of materials. It explains the ways in which we depend on and use materials and the consequences these have, and it introduces methods for thinking about and designing with materials within the context of minimizing environmental impact. Along with its noted in-depth coverage of material consumption, the material life-cycle, selection strategies, and legislative aspects, the second edition includes new case studies, important new chapters on Materials for Low Carbon Power and Material Efficiency, all illustrated by in-text examples and expanded exercises. This book is intended for instructors and students as well as materials engineers and product designers who need to consider the environmental implications of materials in their designs. Introduces methods and tools for thinking about and designing with materials within the context of their role in products and the environmental consequences Contains numerous case studies showing how the methods discussed in the book can be applied to real-world situations Includes full-color data sheets for 40 of the most widely used materials, featuring such environmentally relevant information as their annual production and reserves, embodied energy and process energies, carbon footprints, and recycling data New to this edition: New chapter of Case Studies of Eco-audits illustrating the rapid audit method New chapter on Materials for Low Carbon Power examines the consequences for materials supply of a major shift from fossil-fuel based power to power from renewables New chapter exploring Material Efficiency, or design and management for manufacture to provide the services we need with the least production of materials Recent news-clips from the world press that help place materials issues into a broader context. are incorporated into all chapters End-of-chapter exercises have been greatly expanded The datasheets of Chapter 15 have been updated and expanded to include natural and man-made fibers **Environmental Organic Chemistry John Wiley & Sons** Environmental Organic Chemistry focuses on environmental factors that govern the processes that determine the fate of organic chemicals in natural and engineered systems. The information discovered is then applied to quantitatively assessing the environmental behaviour of organic chemicals. Now in its 2nd edition this book takes a more holistic view on physical-chemical properties of organic compounds. It includes new topics that address aspects of gas/solid partitioning, bioaccumulation, and transformations in the atmosphere. Structures chapters into basic and sophisticated sections Contains illustrative examples, problems and case studies Examines the fundamental aspects of organic, physical and inorganic chemistry - applied to environmentally relevant problems Addresses problems and case studies in one volume **Introduction to Infrastructure: An Introduction to Civil and Environmental Engineering An Introduction to Civil and Environmental Engineering Wiley Global Education** Introduction to Infrastructure: An Introduction to Civil and Environmental Engineering breaks new ground in preparing civil and environmental engineers to meet the challenges of the 21st century. The authors use the infrastructure that is all around us to introduce students to civil and environmental engineering, demonstrating how all the parts of civil and environmental engineering are interrelated to help students see the "big picture" in the first or second year of the curriculum. Students learn not only the what of the infrastructure, but also the how and the why of the infrastructure. Readers learn the infrastructure is a system of interrelated physical components, and how those components affect, and are affected by, society, politics, economics, and the environment. Studying infrastructure allows educators and students to develop a valuable link between fundamental knowledge and the ability to apply that knowledge, so students may translate their knowledge to new contexts. The authors' implementation of modern learning pedagogy (learning objectives, concrete examples and cases, and hundreds of photos and illustrations), and chapters that map well to the ABET accreditation requirements AND the ASCE Civil Engineering Body of Knowledge 2nd edition (with recommendations for using this text in a 1, 2, or 3 hour course) make this text a key part of any civil and/or environmental engineering curriculum. **Engineering Challenges for Sustainable Future Proceedings of the 3rd International Conference on Civil, Offshore and Environmental Engineering (ICCOEE 2016, Malaysia, 15-17 Aug 2016) CRC Press** Engineering Challenges for Sustainable Future contains the papers presented at the 3rd International Conference on Civil, Offshore & Environmental Engineering (ICCOEE2016, Kuala Lumpur, Malaysia, 15-17 August 2016), under the banner of World Engineering, Science & Technology Congress (ESTCON2016). The ICCOEE series of conferences started in Kuala Lumpur, Malaysia 2012, and the second event of the series took place in Kuala Lumpur, Malaysia 2014. This conference series deals with the civil, offshore & environmental engineering field, addressing the following topics: • Environmental and Water Resources Engineering • Coastal and Offshore Engineering • Structures and Materials • Construction and Project Management • Highway, Geotechnical and Transportation Engineering and Geo-informatics This book is an essential reading for academic, engineers and all professionals involved in the area of civil, offshore and environmental engineering. **Methods in Sustainability Science Assessment, Prioritization, Improvement, Design and Optimization Elsevier** Methods in Sustainability Science: Assessment, Prioritization, Improvement, Design and Optimization presents cutting edge, detailed methodologies needed to create sustainable growth in any field or industry, including life cycle assessments, building design, and energy systems. The book utilized a systematic structured approach to each of the methodologies described in an interdisciplinary way to ensure the methodologies are applicable in the real world, including case studies to demonstrate the methods. The chapters are written by a global team of authors in a variety of sustainability related fields. Methods in Sustainability Science: Assessment, Prioritization, Improvement, Design and Optimization will provide academics, researchers and practitioners in sustainability, especially environmental science and environmental engineering, with the most recent methodologies needed to maintain a sustainable future. It is also a necessary read for postgraduates in sustainability, as well as academics and researchers in energy and chemical engineering who need to ensure their industrial methodologies are sustainable. Provides a comprehensive overview of the most recent methodologies in sustainability assessment, prioritization, improvement, design and optimization Sections are organized in a systematic and logical way to clearly present the most recent methodologies for sustainability and the chapters utilize an interdisciplinary approach that covers all considerations of sustainability Includes detailed case studies demonstrating the efficacies of the described methods **Applied Data Analysis and Modeling for Energy Engineers and Scientists Springer Science & Business Media** Applied Data Analysis and Modeling for Energy Engineers and Scientists fills an identified gap in engineering and science education and practice for both students and practitioners. It demonstrates how to apply concepts and methods learned in disparate courses such as mathematical modeling, probability, statistics, experimental design, regression, model building, optimization, risk analysis and decision-making to actual engineering processes and systems. The text provides a formal structure that offers a basic, broad and unified perspective, while imparting the knowledge, skills and confidence to work in data analysis and modeling. This volume uses numerous solved examples, published case studies from the author's own research, and well-conceived problems in order to enhance comprehension levels among readers and their understanding of the "processes" along with the tools. **Environmental Hydrology, Second Edition CRC Press** The technological advances of recent years include the emergence of new

remote sensing and geographic information systems that are invaluable for the study of wetlands, agricultural land, and land use change. Students, hydrologists, and environmental engineers are searching for a comprehensive hydrogeologic overview that supplements information on hydrologic processes with data on these new information technology tools. *Environmental Hydrology, Second Edition* builds upon the foundation of the bestselling first edition by providing a qualitative understanding of hydrologic processes while introducing new methods for quantifying hydrologic parameters and processes. Written by authors with extensive multidisciplinary experience, the text first discusses the components of the hydrologic cycle, then follows with chapters on precipitation, stream processes, human impacts, new information system applications, and numerous other methods and strategies. By updating this thorough text with the newest analytical tools and measurement methodologies in the field, the authors provide an ideal reference for students and professionals in environmental science, hydrology, soil science, geology, ecological engineering, and countless other environmental fields.

Environmental Science in Building Bloomsbury Publishing This popular textbook covers how the built environment and the management of energy relate to the quality of human living-conditions and the environmental performance of buildings. It is the key introductory text for understanding the principles and theories of the environmental science behind construction, and the only text on the market to provide the basic scientific principles of such a broad range of topics. The text covers a range of areas in the field, including climate change, energy management, and sustainability in construction, with an important focus on contemporary environmental topics such as carbon, lifetime performance and rating schemes. The author is known for his extremely clear, finely crafted text, and the book offers a wealth of excellent worked examples. This text is designed to be useful, at all levels, to students and practitioners of architecture, construction studies, building services, surveying, and environmental science. New to this Edition: - Expansion upon the environmental narrative with coverage of contemporary topics such as carbon, lifetime performance and rating schemes - Additional figures, images and sub-topics in chapters - An updated section on building services to give a broader understanding of modern building services equipment options, specifications and performance implications - Inclusion of a new section which offers commentary on the future of environmental science in building

Environmental Technologies and Trends International and Policy Perspectives Springer Science & Business Media The book covers contemporary environmental issues related to such subjects such as: drinking water, air pollution, waste water, hazardous waste and groundwater, and it focusses on current research activities, emerging technologies and future trends. For each major topic area, an overview paper covers the current state of the technology. The individual papers were independently reviewed by scientists and engineers knowledgeable in the field and complemented by summaries that include references to other related work, and additional technical discussion or comments about the subject matter. An introductory chapter in English and French provides an overview of all the papers and summarizes crucial issues presented in the papers and their interrelationship.

Environmental Design An Introduction for Architects and Engineers Taylor & Francis Written and edited by a team of specialists at Max Fordham LLP, one of the UK's leading environmental and building services engineering consultancies, *Environmental Design* is the result of their extensive experience in designing environmentally-friendly buildings. The principles of their approach, which they have taught in numerous schools of architecture and engineering, are clearly presented here. The book starts with some basic scientific principles and environmental issues and then moves on to site planning, energy use, materials and building form. Natural ventilation systems, high-efficiency mechanical equipment and alternative energy sources are also covered. State-of-the-art buildings of exceptional quality are incorporated throughout the text and illustrate the authors' belief that environmentally responsible architecture can be visually exciting. They conclude with a selection of detailed case studies of award-winning projects - including, new for this third edition, Beaufort Court, King's Langley and the National Trust Headquarters, Swindon. This book is essential reading for architects, engineers, planners and students of these disciplines.

Environmental Modeling Using MATLAB Springer Science & Business Media The book has two aims: to introduce basic concepts of environmental modelling and to facilitate the application of the concepts using modern numerical tools such as MATLAB. It is targeted at all natural scientists dealing with the environment: process and chemical engineers, physicists, chemists, biologists, biochemists, hydrogeologists, geochemists and ecologists. MATLAB was chosen as the major computer tool for modeling, firstly because it is unique in its capabilities, and secondly because it is available in most academic institutions, in all universities and in the research departments of many companies. In the 2nd edition many chapters will include updated and extended material. In addition the MATLAB command index will be updated and a new chapter on numerical methods will be added. For the second edition of 'Environmental Modeling' the first edition was completely revised. Text and figures were adapted to the recent MATLAB® version. Several chapters were extended. Correspondingly the index of MATLAB commands was extended considerably, which makes the book even more suitable to be used as a reference work by novices. Finally an introduction into numerical methods was added as a new chapter. "/p>

Waste-to-Energy Technologies and Project Implementation William Andrew This book covers in detail programs and technologies for converting traditionally landfilled solid wastes into energy through waste-to-energy projects Modern Waste-to-Energy plants are being built around the world to reduce the levels of solid waste going into landfill sites and contribute to renewable energy and carbon reduction targets. The latest technologies have also reduced the pollution levels seen from early waste incineration plants by over 99% With case studies from around the world, Rogoff and Screve provide an insight into the different approaches taken to the planning and implementation of WTE The second edition includes coverage of the latest technologies and practical engineering challenges as well as an exploration of the economic and regulatory context for the development of WTE

A Primer on Environmental Sciences AuthorHouse In a modern society, it is easy to forget that our society depends largely on the environmental processes that govern our world. Environment refers to an aggregate of surroundings in which living beings such as humans, animals, and plants live and non-living things exist. It includes air, water, land, living organisms, and materials surrounding us. The environment is an important part of our daily lives. Environmental issues are now part of every career path and employment area. Environmental science is an interdisciplinary field that applies principles from all the known technologies and sciences to study the environment and provide solutions to environmental problems. It is the study of how the earth works and how we can deal with the environmental issues we face. There is an ever demanding need for experts in this field because the environment is responsible for making our world beautiful and habitable. For this reason, environmental science is now being taught at high schools and higher institutions of learning. Education on environmental science will empower the youths to take an active role in the world in which they live.

Introduction to Environmental Geotechnology, Second Edition CRC Press 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. Its interdisciplinary coverage includes soil science, physical chemistry, mineralogy, geology, ground pollution, and more.

Exploring Engineering An Introduction to Engineering and Design Academic Press Winner in its first edition of the Best New Undergraduate Textbook by the Professional and Scholarly Publishing Division of the American Association of Publishers (AAP), Kosky, et al is the first text offering an introduction to the major engineering fields, and the engineering design process, with an interdisciplinary case study approach. It introduces the fundamental physical, chemical and material bases for all engineering work and presents the engineering design process using examples and hands-on projects. Organized in two parts to cover both the concepts and practice of engineering: Part I, Minds On, introduces the fundamental physical, chemical and material bases for all engineering work while Part II, Hands On, provides opportunity to do design projects An Engineering Ethics Decision Matrix is introduced in Chapter 1 and used throughout the book to pose ethical challenges and explore ethical decision-making in an engineering context Lists of "Top Engineering Achievements" and "Top Engineering Challenges" help put the material in context and show engineering as a vibrant discipline involved in solving societal problems New to this edition: Additional discussions on what engineers do, and the distinctions between engineers, technicians, and managers (Chapter 1) New coverage of Renewable Energy and Environmental Engineering helps emphasize the emerging interest in Sustainable Engineering New discussions of Six Sigma in the Design section, and expanded material on writing technical reports Re-organized and updated chapters in Part I to more closely align with specific engineering disciplines new end of chapter exercises throughout the book

Climate Change Observed impacts on Planet Earth Elsevier The climate of the Earth is always changing. As the debate over the implications of changes in the Earth's climate has grown, the term climate change has come to refer primarily to changes we've seen over recent years and those which are predicted to be coming, mainly as a result of human behavior. This book serves as a broad, accessible guide to the science behind this often political and heated debate by providing scientific detail and evidence in language that is clear to both the non-specialist and the serious student. * provides all the scientific evidence for and possible causes of climate change in one book * written by expert scientists working in the field * logical, non-emotional conclusions * a source book for the latest findings on climate change