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Today's economy is fueled by knowledge. Every leader knows this to be true, yet few have systematic methods for converting organizational knowledge into economic value. This book argues that communities of practice--groups of individuals formed around common interests and expertise--provide the ideal vehicle for driving knowledge-management strategies and building lasting competitive advantage. Written by leading experts in the field, *Cultivating Communities of Practice* is the first book to outline models and

methods for systematically developing these essential groups. Through compelling research and company examples, including DaimlerChrysler, McKinsey & Company, Shell, and the World Bank, authors Etienne Wenger, Richard McDermott, and William M. Snyder show how world-class organizations have leveraged communities of practice to drive strategy, generate new business opportunities, solve problems, transfer best practices, develop employees' professional skills, and recruit and retain top talent. Underscoring the new central role communities of practice are playing in today's

knowledge economy, *Cultivating Communities of Practice* is the definitive guide to fostering, designing, and developing these powerful groups within and across organizations. Modern buildings are both wasteful machines that can be made more efficient and instruments of the massive, metropolitan system engendered by the power of high-quality fuels. A comprehensive method of environmental design must reconcile the techniques of efficient building design with the radical urban and economic reorganization that we face. Over the coming century, we will be challenged to return to the re-

newable resource base of the eighteenth-century city with the knowledge, technologies, and expectations of the twenty-first-century metropolis. This book explores the architectural implications of systems ecology, which extends the principles of thermodynamics from the nineteenth-century focus on more efficient machinery to the contemporary concern with the resilient self-organization of ecosystems. Written with enough technical material to explain the methods, it does not include in-text equations or calculations, relying instead on the energy system diagrams to convey the argument. *Architecture and Systems Ecology* has minimal technical jargon and an emphasis on intelligible design conclusions, making it suitable for architecture students and professionals who are engaged with the fundamental issues faced by sustainable design. The energy systems language provides a holistic context for the many kinds of performance already evaluated in architecture—from energy use to material selection and even the choice of building style. It establishes the foundation for environmental principles of design that embrace the full

complexity of our current situation. Architecture succeeds best when it helps shape, accommodate, and represent new ways of living together.

Environmental Science: A Global Concern is a comprehensive presentation of environmental science for non-science majors which emphasizes critical thinking, environmental responsibility, and global awareness. This book is intended for use in a one or two-semester course in environmental science, human ecology, or environmental studies at the college or advanced placement high school level. As practicing scientists and educators, the Cunningham author team brings decades of experience in the classroom, in the practice of science, and in civic engagement. This experience helps give students a clear sense of what environmental science is and why it matters in this exciting, new 13th edition. *Environmental Science: A Global Concern* provides readers with an up-to-date, introductory global view of essential themes in environmental science. The authors balance evidence of serious environmental challenges with ideas about what we can do to overcome them. An entire chapter focuses

on ecological restoration; one of the most important aspects of ecology today. Case studies in most chapters show examples of real progress, and “What Can You Do?” lists give students ideas for contributing to solutions. Nanotechnology is often described as an emerging technology - one that not only holds promise for society, but also is capable of revolutionizing our approaches to common problems. Nanotechnology is not a completely new field; however, it is only recently that discoveries in this field have advanced so far as to warrant examination of their impact upon the world around us. Nanotechnology has direct beneficial applications for medicine and the environment, but like all technologies it may have unintended effects that can adversely impact the environment, both within the human body and within the natural ecosystem. How does the science move forward in a way that best protects the public and gets health and safety right the first time? Implications of Nanotechnology for Environmental Health Research identifies the areas in which additional research is needed and the processes by which

changes can occur.

International experts provide a comprehensive picture of the principles, concepts and methods that are applicable to problems originating from the interaction between the living/non-living environment and mankind. Both the analysis of such problems and the way solutions to environmental problems may work in specific societal contexts are addressed. Disciplinary approaches are discussed but there is a focus on multi- and interdisciplinary methods. A large number of practical examples and case studies are presented. There is special emphasis on modelling and integrated assessment. This book is different because it stresses the societal, cultural and historical dimensions of environmental problems. The main objective is to improve the ability to analyse and conceptualise environmental problems in context and to make readers aware of the value and scope of different methods. Ideal as a course text for students, this book will also be of interest to researchers and consultants in the environmental sciences.

How will we meet rising energy demands? What

are our options? Are there viable long-term solutions for the future? Learn the fundamental physical, chemical and materials science at the heart of:

- Renewable/non-renewable energy sources
- Future transportation systems
- Energy efficiency
- Energy storage

Whether you are a student taking an energy course or a newcomer to the field, this textbook will help you understand critical relationships between the environment, energy and sustainability. Leading experts provide comprehensive coverage of each topic, bringing together diverse subject matter by integrating theory with engaging insights. Each chapter includes helpful features to aid understanding, including a historical overview to provide context, suggested further reading and questions for discussion. Every subject is beautifully illustrated and brought to life with full color images and color-coded sections for easy browsing, making this a complete educational package. Fundamentals of Materials for Energy and Environmental Sustainability will enable today's scientists and educate future generations. Environmental Science: A Global Concern is a comprehensive presentation

of environmental science that emphasizes critical thinking, environmental responsibility, and global awareness. As practicing scientists and educators, the Cunningham author team brings decades of experience in the classroom, in the practice of science, and in civic engagement. This experience helps give students a clear sense of what environmental science is and why it matters. Environmental Science: A Global Concern provides readers with an up-to-date, introductory global view of essential themes in environmental science. The authors balance evidence of serious environmental challenges with ideas about what we can do to overcome them. An entire chapter focuses on ecological restoration; one of the most important aspects of ecology today. In this edition, Case Studies show examples of real progress and What Can You Do? lists give students ideas for contributing solutions. Includes Print Student Edition Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes,

and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780073304465 9780073050898 .

Environmental engineering, is by its very nature, interdisciplinary and it is a challenge to develop courses that will provide students with a thorough broad-based curriculum that includes every aspect of the environmental engineering profession. Environmental engineers perform a variety of functions, most critical of which are process design for waste treatment or pollution prevention, fate and transport modeling, green engineering, and risk assessment. Chemical thermodynamics and chemical kinetics, the two main pillars of physical chemistry, are two of the many subjects that are crucial to environmental engineering. Based on the success of the successes of previous editions, Principles of Environmental Thermodynamics and Kinetics, Fourth Edition, provides an overarching view of the applications of chemical thermodynamics and kinetics in various aspects of the field of environmental science and engineering. Written by ex-

perts in the field, this new edition offers an improved logical progression of the text with principles and applications, includes new case studies with current relevant environmental events and their relationship to thermodynamics and kinetics, and adds examples and problems for the updated environmental events. It also includes a comprehensive analysis of green engineering with relation applications, updated appendices, and an increased number of thermodynamic and kinetic data for chemical species. While it is primarily intended for undergraduate students at the junior/senior level, the breadth and scope of this book make it a valuable resource for introductory graduate courses and a useful reference for environmental engineers.

"Environmental Data Analysis with MatLab" is for students and researchers working to analyze real data sets in the environmental sciences. One only has to consider the global warming debate to realize how critically important it is to be able to derive clear conclusions from often-noisy data drawn from a broad range of sources. This book teaches the basics of the underlying theory of data analysis, and

then reinforces that knowledge with carefully chosen, realistic scenarios. MatLab, a commercial data processing environment, is used in these scenarios; significant content is devoted to teaching how it can be effectively used in an environmental data analysis setting. The book, though written in a self-contained way, is supplemented with data sets and MatLab scripts that can be used as a data analysis tutorial. It is well written and outlines a clear learning path for researchers and students. It uses real world environmental examples and case studies. It has MatLab software for application in a readily-available software environment. Homework problems help user follow up upon case studies with homework that expands them.

"Keywords for Environmental Studies analyzes the central terms and debates currently structuring the most exciting research in and across environmental studies, including the environmental humanities, environmental social sciences, sustainability sciences, and the sciences of nature. Sixty essays from humanists, social scientists, and scientists, each written about a single term, reveal the broad

range of quantitative and qualitative approaches critical to the state of the field today. From “ecotourism” to “ecoterrorism,” from “genome” to “species,” this accessible volume illustrates the ways in which scholars are collaborating across disciplinary boundaries to reach shared understandings of key issues—such as extreme weather events or increasing global environmental inequities—in order to facilitate the pursuit of broad collective goals and actions. This book underscores the crucial realization that every discipline has a stake in the central environmental questions of our time, and that interdisciplinary conversations not only enhance, but are requisite to environmental studies today.”--pub. desc.

Principles of Environmental Sciences provides a comprehensive picture of the principles, concepts and methods that are applicable to problems originating from the interaction between the living and non-living environment and mankind. Both the analysis of such problems and the way solutions to environmental problems may work in specific societal contexts are addressed. Disciplinary approaches are discussed

but there is a focus on multi- and interdisciplinary methods. A large number of practical examples and case studies are presented. There is special emphasis on modelling and integrated assessment. This book is different because it stresses the societal, cultural and historical dimensions of environmental problems. The main objective is to improve the ability to analyse and conceptualise environmental problems in context and to make readers aware of the value and scope of different methods. The authors contributing to Principles of Environmental Sciences come from several countries and a wide variety of scientific backgrounds in the fields of natural and social sciences, and the humanities.

Written by an internationally-recognized team of natural gas industry experts, the fourth edition of Handbook of Natural Gas Transmission and Processing is a unique, well-researched, and comprehensive work on the design and operation aspects of natural gas transmission and processing. Six new chapters have been added to include detailed discussion of the thermodynamic and energy efficient

cy of relevant processes, and recent developments in treating super-rich gas, high CO₂ content gas, and high nitrogen content gas with other contaminants. The new material describes technologies for processing today’s unconventional gases, providing a fresh approach in solving today’s gas processing challenges including greenhouse gas emissions. The updated edition is an excellent platform for gas processors and educators to understand the basic principles and innovative designs necessary to meet today’s environmental and sustainability requirement while delivering acceptable project economics. Covers all technical and operational aspects of natural gas transmission and processing. Provides pivotal updates on the latest technologies, applications, and solutions. Helps to understand today’s natural gas resources, and the best gas processing technologies. Offers design optimization and advice on the design and operation of gas plants.

Drawing on the authors’ extensive experience in the processing and disposal of waste, An Introduction to Nuclear Waste Immobilisation, Second Edition examines the gamut

of nuclear waste issues from the natural level of radionuclides in the environment to geological disposal of waste-forms and their long-term behavior. It covers all-important aspects of processing and immobilization, including nuclear decay, regulations, new technologies and methods. Significant focus is given to the analysis of the various matrices used, especially cement and glass, with further discussion of other matrices such as bitumen. The final chapter concentrates on the performance assessment of immobilizing materials and safety of disposal, providing a full range of the resources needed to understand and correctly immobilize nuclear waste. The fully revised second edition focuses on core technologies and has an integrated approach to immobilization and hazards. Each chapter focuses on a different matrix used in nuclear waste immobilization: cement, bitumen, glass and new materials. Keeps the most important issues surrounding nuclear waste - such as treatment schemes and technologies and disposal - at the forefront. Principles of Environmental Science: Inquiry and Applications is perfect for the one-semester, non-

majors environmental science course. True to its title, the goal of this concise text is to provide an up-to-date, introductory view of essential themes in environmental science along with offering students numerous opportunities to practice scientific thinking and active learning.

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.

This textbook presents the timeless basic physical and mathematical principles and philosophy of environmental modeling to students who need to be taught how to think in a different way than they would for more narrowly-defined engineering or physics problems. Examples come from a range of hydrologic, atmospheric, and geophysical

problems.

Planet Earth : rocks, life, and history -- The Earth's atmosphere -- Global warming and climate change -- Chemistry of the troposphere -- Chemistry of the stratosphere -- Analysis of air and air pollutants -- Water resources -- Water pollution and water treatment -- Analysis of water and wastewater -- Fossil fuels : our major source of energy -- Nuclear power -- Energy sources for the future -- Inorganic metals in the environment -- Organic chemicals in the environment -- Insecticides, herbicides, and insect control -- Toxicology -- Asbestos -- The disposal of dangerous wastes.

The Science and Technology of Flexible Packaging: Multilayer Films from Resin and Process to End Use provides a comprehensive guide to the use of plastic films in flexible packaging, covering scientific principles, properties, processes, and end use considerations. The book brings the science of multilayer films to the practitioner in a concise and impactful way, presenting the fundamental understanding required to improve product design, material selection, and processes, and includes information on why one mate-

rial is favored over another for a particular application, or how the film or coating affects material properties. Detailed descriptions and analysis of the key properties of packaging films are provided from both an engineering and scientific perspective. End-use effects are also covered in detail, providing key insights into the way the products being packaged influence film properties and design. The book bridges the gap between key scientific literature and the practical challenges faced by the flexible packaging industry, providing essential scientific insights, best practice techniques, environmental sustainability information, and key principles of structure design to enable engineers and scientists to deliver superior products with reduced development time and cost. Provides essential information on all aspects of multilayer films in flexible packaging Aids in material selection and processing, shortening development times and delivering stronger products Bridges the gap between scientific principles and key challenges in the packaging industry, with practical explanations to assist practitioners in overcoming those challenges

Rather than the 25 to 30 chapters found in most environmental science textbooks, the authors have limited *Principles of Environmental Science: Inquiry and Applications* to 16 chapters--perfect for the one-semester, non-majors environmental science course. True to its title, the goal of this concise text is to provide an up-to-date, introductory view of essential themes in environmental science along with offering students numerous opportunities to practice scientific thinking and active learning.

Many geochemists focus on natural systems with less emphasis on the human impact on those systems. Environmental chemists frequently approach their subject with less consideration of the historical record than geoscientists. The field of environmental geochemistry combines these approaches to address questions about the natural environment and anthropogenic effects on it. Eby provides students with a solid foundation in basic aqueous geochemistry before discussing the important role carbon compounds, isotopes, and minerals play in environmental issues. He then guides students

through how these concepts apply to problems facing our atmosphere, continental lands, and oceans. Rather than broadly discussing a variety of environmental problems, the author focuses on principles throughout the text, leading students to understand processes and how knowledge of those processes can be applied to environmental problem solving. A wide variety of case studies and quantitative problems accompany each chapter, giving each instructor the flexibility to tailor the material to his/her course. Many problems have no single correct answer, illustrating the analytical nature of solving real-world environmental problems. Can economic growth be environmentally sustainable? This crucial question goes right to the heart of environmental economics and is a matter of increasing concern globally. The first edition of this popular title was the first introductory textbook in environmental economics that truly attempted to integrate economics with not only the environment but also ecology. This new version builds and improves upon the popular formula with new material, new examples, new pedagogical features and new questions

for discussion. With international case-studies and examples, this book will prove an excellent choice for introducing both students and other academics to the world of environmental economics. The New York Times-best-selling "skeptical environmentalist" argues that panic over climate change is causing more harm than good. Hurricanes batter our coasts. Wildfires rage across the American West. Glaciers collapse in the Arctic. Politicians, activists, and the media espouse a common message: climate change is destroying the planet, and we must take drastic action immediately to stop it. Children panic about their future, and adults wonder if it is even ethical to bring new life into the world. Enough, argues bestselling author Bjorn Lomborg. Climate change is real, but it's not the apocalyptic threat that we've been told it is. Projections of Earth's imminent demise are based on bad science and even worse economics. In panic, world leaders have committed to wildly expensive but largely ineffective policies that hamper growth and crowd out more pressing investments in human capital, from immunization to education. False Alarm

will convince you that everything you think about climate change is wrong -- and points the way toward making the world a vastly better, if slightly warmer, place for us all. One of the problems of using plants in environmental studies is finding current information. Because plants play a key role in environmental studies, from the greenhouse effect to environmental toxicological studies, information is widely scattered over many different fields and in many different sources. *Plants for Environmental Studies* solves that problem with a single, comprehensive source of information on the many ways plants are used in environmental studies. Written by experts from around the world and edited by a team of prominent environmental specialists, this book is the only source of complete information on environmental impacts, mutation, statistical analyses, relationships between plants and water, algae, plants in ecological risk assessment, compound accumulations, and more. Encompassing algae and vascular plants in both aquatic and terrestrial environments, this book contains a diverse collection of laboratory and in situ studies, meth-

ods, and procedures using plants to evaluate air, water, wastewater, sediment, and soil.

A manifesto for a radically different philosophy and practice of manufacture and environmentalism "Reduce, reuse, recycle" urge environmentalists; in other words, do more with less in order to minimize damage. But as this provocative, visionary book argues, this approach perpetuates a one-way, "cradle to grave" manufacturing model that dates to the Industrial Revolution and casts off as much as 90 percent of the materials it uses as waste, much of it toxic. Why not challenge the notion that human industry must inevitably damage the natural world? In fact, why not take nature itself as our model? A tree produces thousands of blossoms in order to create another tree, yet we do not consider its abundance wasteful but safe, beautiful, and highly effective; hence, "waste equals food" is the first principle the book sets forth. Products might be designed so that, after their useful life, they provide nourishment for something new--either as "biological nutrients" that safely re-enter the environment or as "technical

nutrients" that circulate within closed-loop industrial cycles, without being "downcycled" into low-grade uses (as most "recyclables" now are). Elaborating their principles from experience (re)designing everything from carpeting to corporate campuses, William McDonough and Michael Braungart make an exciting and viable case for change.

Environmental Science, Ninth Edition, is a comprehensive presentation of environmental science for non-science majors which emphasizes critical thinking, environmental responsibility, and global awareness. This book is intended for use in a one- or two-semester course in environmental science, human ecology, or environmental studies at the college or advanced placement high school level. . . The goal of this book is to provide an up-to-date, introductory global view of essential themes in environmental science along with emphasis on details and case studies that will help students process and retain the general principles. Because most students who will use this book are freshman or sophomore non-science majors, the authors make the text readable and accessible without technical

jargon or a presumption of prior science background. At the same time, enough data and depth are presented to make this book suitable for many upper-division classes and a valuable resource for students who will keep it in their personal libraries after their formal studies are completed..

A fully updated and expanded edition of the best-selling guide on toxicology and its practical application The field of toxicology has grown enormously since Industrial Toxicology: Safety and Health Applications in the Workplace was first published in 1985. And while the original edition was hugely popular among occupational health professionals, the time is ripe to address toxic agents not only in the industrial setting but also in the environment at large. Renamed Principles of Toxicology: Environmental and Industrial Applications, this new edition provides health protection professionals as well as environmental scientists with precise, up-to-date, practical information on how to apply the science of toxicology in both the occupational and environmental setting. Through contributions from leading experts in di-

verse fields, Principles of Toxicology, Second Edition features: Clear explanations of the fundamentals necessary for an understanding of the effects of chemical hazards on human health and ecosystems Coverage of occupational medicine and epidemiological issues The manifestation of toxic agents such as metals, pesticides, organic solvents, and natural toxins Special emphasis on the evaluation and control of toxic hazards Specific case histories on applying risk assessment methods in the modern workplace Ample figures, references, and a comprehensive glossary of toxicological terms Environmental principles proliferate in domestic international legal and policy discourse - from the polluter pays and precautionary principles to the principles of integration and sustainability - reflecting key goals of environmental protection and sustainable development on which there is apparent political consensus. Environmental principles also have a high profile in environmental law, beyond their popularity as policy and political concepts, as ideas that might unify the subject and provide it with conceptual foundations or boost its delivery of envi-

ronmental outcomes. However, environmental principles are elusive concepts in environmental law - their meanings and legal functions are ambiguous, and they have varying histories in different jurisdictions. This book aims to deepen the legal understanding of environmental principles in light of recent legal developments. To this end, it analyses closely the increasing legal effects of environmental principles in different jurisdictions to demonstrate how they are in fact shaping and revealing innovative bodies of environmental law. This analysis is a step forward in understanding a key feature of modern environmental law, as well as being a contribution to environmental policy debates and discussions internationally that rely heavily on environmental principles, including their supposed legal effects.

This text provides a synthesis of the existing field of wetland ecology using a few central themes, including key environmental factors that produce wetland community types and some unifying problems such as assembly rules, restoration and conservation.

Fundamentals of Environ-

mental Studies is taught as a compulsory paper to first-year undergraduate students across major technical universities in India. This book introduces the fundamental principles and concepts of environmental science, ecology and related interdisciplinary subjects, such as policy, law, pollution control, economics and natural resource management. It covers a wide range of topics and issues including biodiversity, global warming, acid rain, ozone layer depletion, nuclear accidents, nuclear holocaust, disaster management, manipulation of various natural resources including water, land, forests, food and mineral resources, and the problems associated with natural resource management. It also analyzes different types of ecosystems, biochemical cycles and laws of thermodynamics and provides easy-to-understand examples. In addition, the book offers separate chapters on various types of environmental pollution and waste management, including waste water treatment, solid waste management and green management.

A graduate textbook that provides a unified treatment of machine learning

methods and their applications in the environmental sciences.

Health Sciences & Professions

Much of the world's surface, even under the oceans, is covered in thick deposits of sedimentary particles - gravel, sand, silt and clay. The nature of the deposits and their formation is very much dependent on the distribution of particles of different sizes. However, different instruments measure different attributes of a particle's size, based on how fast a particle settles in water, or the surface area of a particle, or its length. This book provides information on the how and why of particle size analysis in terms of understanding these sediment deposits.

Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780073532516 .

This Handbook is the first comprehensive account of

comparative environmental law. It examines in detail the methodological foundations of the discipline as well as the substance of environmental law across countries from four vantage points: country studies from all continents, responses to common problems (including air pollution, water management, nature conservation, genetically modified organisms, climate change and energy, chemicals, waste), foundational components of environmental law systems (including principles, property rights, administrative and judicial organisation, command-and-control regulation, market mechanisms, informational techniques and liability mechanisms), and common interactions of environmental protection with the broader public, private, and criminal law contexts. The volume brings together the foremost authorities in this field from around the world to provide a concise, self-contained, and technically rigorous account of environmental law as a single overall system.

This is an updated version of the best selling first edition, *Ecological Census Techniques*, with updating, some new chapters and authors. Almost all

ecological and conservation work involves carrying out a census or survey. This practically focussed book describes how to plan a census, the practical details and shows with worked examples how to analyse the results. The first three chapters describe planning, sampling and the basic theory necessary for carrying out a census. In the subsequent chapters international experts describe the appropriate methods for counting plants, insects, fish, amphibians, reptiles, mammals and birds. As many censuses also relate the results to environmental variability, there is a chapter explaining the main methods. Finally, there is a list of the most common mistakes encountered when carrying out a census.

Soil and Environmental Chemistry, Second Edition, presents key aspects of soil chemistry in environmental science, including dose responses, risk characterization, and practical applications of calculations using spreadsheets. The book offers a holistic, practical approach to the application of environmental chemistry to soil science and is designed to equip the

reader with the chemistry knowledge and problem-solving skills necessary to validate and interpret data. This updated edition features significantly revised chapters, averaging almost a 50% revision overall, including some re-ordering of chapters. All new problem sets and solutions are found at the end of each chapter, and linked to a companion site that reflects advances in the field, including expanded coverage of such topics as sample collection, soil moisture, soil carbon cycle models, water chemistry simulation, alkalinity, and redox reactions. There is also additional pedagogy, including key term and real-world scenarios. This book is a must-have reference for researchers and practitioners in environmental and soil sciences, as well as intermediate and advanced students in soil science and/or environmental chemistry. Includes additional pedagogy, such as key terms and real-world scenarios. Supplemented by over 100 spreadsheets to migrate readers from calculator-based to spreadsheet-based problem-solving that are directly linked from the text. Includes example problems and solutions to enhance understanding

Significantly revised chapters link to a companion site that reflects advances in the field, in-

cluding expanded coverage of such topics as sample collection, soil mois-

ture, soil carbon cycle models, water chemistry simulation, alkalinity, and redox reactions