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Higher Education Catalog 2021–22

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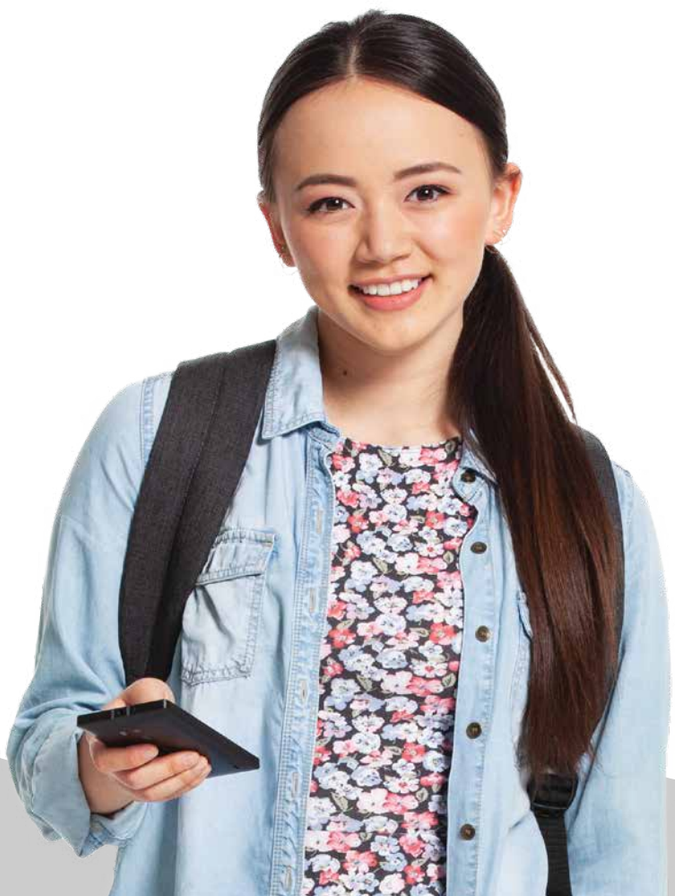
Take Control

You have full power over when students receive help on homework, so they don't rely on it as a crutch.

Custom Touch

Keep students engaged by embedding video apps or creating your own questions.

Help your students prepare for the test with more than just homework.



Personalized Help

Focus class or study time at a glance with award winning analytics.

Grading

WebAssign grades more like a real professor, and less like a computer program.

Enrich the Teaching and Learning Experience

WebAssign is a flexible and fully customizable online instructional system for math and science disciplines that puts powerful tools in the hands of instructors, enabling you to create and deploy assignments, instantly assess individual student and whole class performance, and realize your teaching goals. *WebAssign's* numerous product features are designed to provide you and your students with flexible online tools for measured learning.

Features & Benefits

- **Rely on Unparalleled Answer Evaluation and Grading**

WebAssign's patented grading engine grades more like a real professor, and less like a computer program. The software behind the grading system is structured to understand and interact with mathematical language instead of forcing answer statements to fit a specific and inflexible framework. With the *WebAssign* grading system, students receive immediate and accurate feedback and enables you to focus on teaching instead of grading.

- **Manage Assignments**

Selecting content for your assignments is simple. With *WebAssign's* question browser you can choose questions from your adopted textbook and the free additional resources collection, as well as create or modify your own questions. Usage statistics for each question help you gauge the difficulty level and average time on task based on historical question use.

- **Assess Performance with Powerful Analytics**

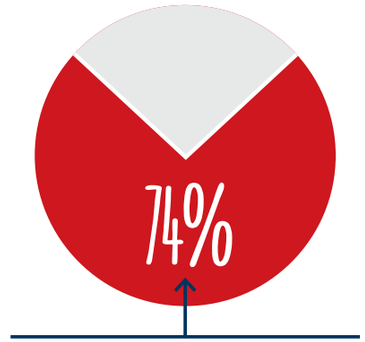
WebAssign gives you an analytical view of your students' performance on questions and topics throughout the course. Use Class Insights to tailor your classroom discussions to review topics your class may not understand, or identify specific students who may need extra help. This tool lets you configure all settings and is completely customizable to your classroom needs.

- **LMS Integrations**

WebAssign integrates with popular LMS platforms for ease of use and can eliminate manual entry of routine data by linking your institution's information systems to our software.

Students can use My Class Insights to check their individual performance and get more practice on tough topics.

Enable Show My Work to let students explain the reasoning behind their answers on assignment questions.



74% of students strongly agreed or agreed that using *WebAssign* helped them stay on track with the course.

Personalized Services

Take advantage of our personalized services, designed to meet your needs and those of your students, so you'll be confident and ready to go on the first day of class. From hands-on help with course set up, to proactive support throughout the term, we are committed to delivering you a successful digital experience. Visit our Partnership Pledge page to learn more, then contact your Learning Consultant to craft your personalized Pledge today.

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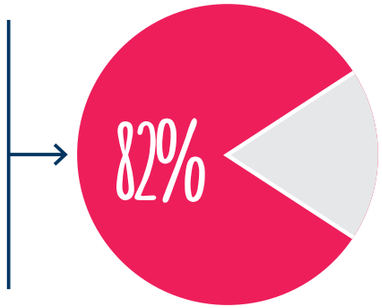
CENGAGE | OWL^V2

Enhanced to Elevate Mastery

Developed by teaching chemists, *OWLv2*—the most powerful learning system for Chemistry—is now better than ever. New on-the-spot math remediation and targeted guidance with enhanced error-specific feedback supports student learning outside of class and moves them past rote memorization to mastery. The addition of all-in-one laddered assessment sets enables instructors to assign a variety of dynamic question types—from simulations to end-of-chapter exercises—so students strengthen their conceptual foundation before moving on to more challenging problems.

As the only online learning system that enables students to work on a problem until they understand the concept behind it, *OWLv2* moves students beyond memorization and keeps them motivated to learn.

In a recent survey,
82% of students
reported that OWLv2 challenged them and helped them learn the material.



"With OWLv2, students are able to learn the process rather than memorize answers to questions."

Steven Neal
Professor, University of Tennessee Knoxville

"OWLv2 has improved student learning in my classroom immensely. What I've seen is the use of OWL dramatically improves a person's score."

Houston Brown
Lecturer, University of Houston Downtown

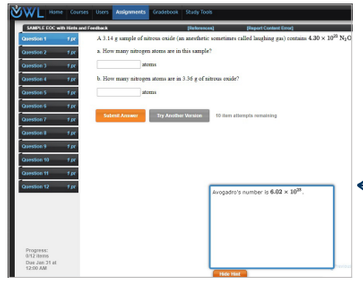
"OWLv2 was a challenge and it made me really think and try to learn the material."

Natalie
Student, The Ohio State University

www.cengage.com/owlv2

Hints and Answer-Specific Feedback

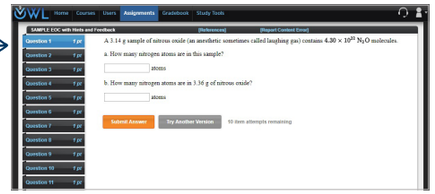
We're enhancing *OWLv2* to provide students with more timely and relevant guidance, before the teachable moment is lost.



Sometimes students don't even know how to start to solve a problem, so we're adding hints to select end-of-chapter questions.

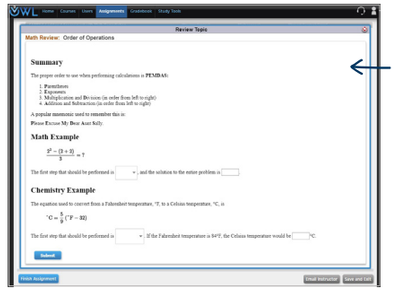
Students can access the hint before they attempt the problem to get guidance on difficult topics.

We're also adding answer-specific feedback to address common incorrect answers. The targeted feedback explains why the student's answer is incorrect and guides them toward the correct solution.



Math Remediation

Poor math skills among students is one of the biggest challenges in this course. That's why we're adding math review exercises at the question level to support students when they're stuck.

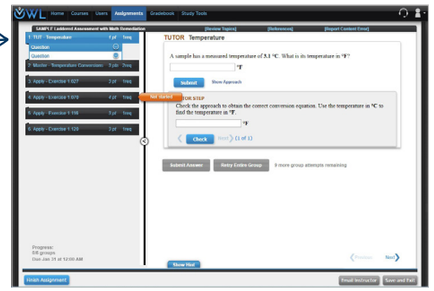


The math remediation includes a short summary of the math concept related to the problem, a mathematical example and a Chemistry-based example.

All-in-One Laddered Assessment Sets

Laddered Assessments are new assignment sets in *OWLv2* that combine conceptual modules with more traditional homework questions. This provides students a structured learning path to bolster their skills.

Students start with conceptual exercises like tutorials and simulations, then practice single concepts and skills in Mastery, then finally application in end-of-chapter exercises.



What makes OWLv2 the most trusted online learning system for Chemistry?

- Unique Mastery Learning Activities that ensure students' conceptual learning by presenting a group of questions on the same topic and requiring students to get a minimum number correct
- Learning Tools like adaptive review modules, interactive study tools and text-specific resources that meet students on their level
- Powerful Gradebook Analytics, including comprehensive reports and concise progress snapshots, that help you track student progress

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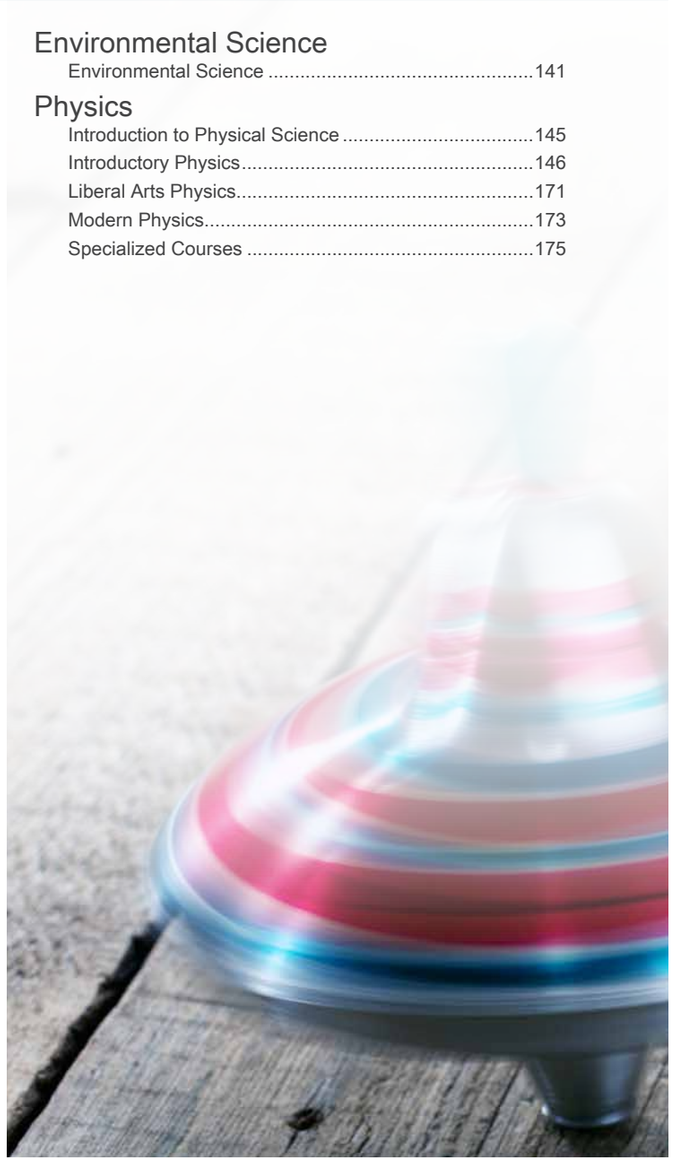

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ASTRONOMY

INTRODUCTORY ASTRONOMY

FOUNDATIONS OF ASTRONOMY, 14E

Michael A. Seeds, Franklin and Marshall College; Dana Backman

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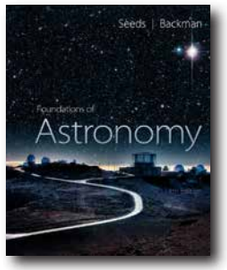

Fascinating, engaging and extremely visual, FOUNDATIONS OF ASTRONOMY, 14th Edition, is renowned for its current coverage, reader-friendly presentation and detailed--yet clear--explanations. The authors' goals are to help you use Astronomy to understand science, and use science to answer two fundamental questions: What are we? And how do we know? Available with WebAssign, the powerful digital solution that enriches the teaching and learning experience. Complete with practice opportunities, a wealth of supplemental resources and immediate feedback, you'll be set up to succeed.

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STARS AND GALAXIES, 10E

Michael A. Seeds, Franklin and Marshall College

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Fascinating, engaging and extremely visual, STARS AND GALAXIES, 10th Edition, is renowned for its current coverage, reader-friendly presentation and detailed--yet clear--explanations. The authors' goals are to help you use Astronomy to understand science, and use science to answer two fundamental questions: What are we? And how do we know? Available with MindTap Astronomy, the digital learning solution that helps you learn on your terms. Read or listen to the text when and where you want--even on your device--and study with the aid of instructor notifications, flashcards, practice quizzes and more.

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THE SOLAR SYSTEM, 10E

Michael A. Seeds, Franklin and Marshall College

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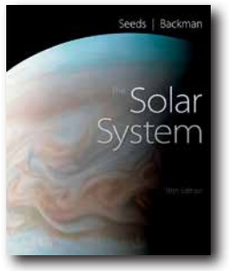

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HORIZONS: EXPLORING THE UNIVERSE, 14E

Michael A. Seeds, Franklin and Marshall College; Dana Backman

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Focusing on two central questions -- "What are we?" and "How Do We Know?" -- HORIZONS: EXPLORING THE UNIVERSE, 14th Edition, helps you understand our place in the universe and how scientists work. Chapter-opening "Guideposts" and a conversational writing style make the content accessible and help you acquire an understanding of the universe (rather than just memorize basic facts); and online resources let you study where and when you want, to best meet your individual learning style.

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HORIZONS, 13E

Exploring the Universe, Hybrid (with CengageNOW Printed Access Card)

Michael A. Seeds, Franklin and Marshall College; Dana Backman; Michele Montgomery, University of Central Florida (UCF)

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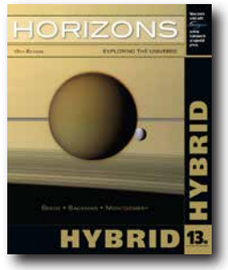

Based on their best-selling astronomy textbook, authors Mike Seeds, Dana Backman, and Michele Montgomery present HORIZONS HYBRID: EXPLORING THE UNIVERSE, Thirteenth Edition, to help you understand your place in the universe--not just your location in space but your role in the unfolding history of the physical universe. To achieve this goal, they focus on two central questions: "What Are We?" which highlights your place as a planet dweller in an evolving universe, guiding you to better understand where we came from and how we formed; and "How Do We Know?" which provides insights into how science works and how the process of science can teach us more about what we are. In this edition, all end-of-chapter material is available online in our CNOW homework system, and there is a MindTap Reader version available to students.

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UNIVERSE, 8E

Solar System, Stars, and Galaxies

Michael A. Seeds, Franklin and Marshall College; Dana Backman

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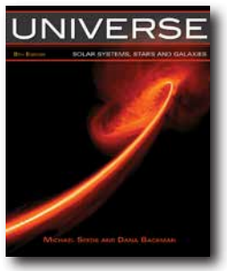

The 8th edition of Universe: Solar System, Stars, and Galaxies is fully updated with the latest discoveries and online resources to meet the needs of today's students. The text begins with sky and solar system before moving on to the stars and galaxies. Focusing on two central questions, "What are we?", and "How Do We Know?" Seeds and Backman help students understand their place in the universe, and how scientists work. The accompanying Enhanced WebAssign includes the most powerful online homework solution, tutorials written by author Michael Seeds, and more. Virtual Astronomy Labs 2.0 offers hands-on lab experience with twenty key concepts. Whether you prefer a robust online learning system or interactive virtual labs, Universe helps students thrive in your introductory astronomy course! Available with InfoTrac® Student Collections http://gocengage.com/infotrac.

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AVIATION

AVIATION

AVIATION SAFETY

A Balanced Industry Approach

Michael Ferguson; Sean Nelson

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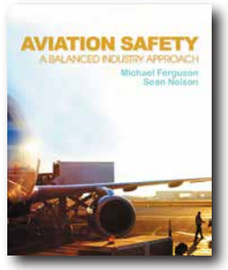

AVIATION SAFETY: A BALANCED INDUSTRY APPROACH,focuses on various aspects of safety pertinent to the aviation industry. Featuring issues on contemporary aviation safety, flight safety programs, regulatory organizations, ground operations safety, gap analysis, ethics, and safety management systems, the book provides a theoretical background to safety issues, while making a significant connection to how the information can be directly applied to the aviation industry.

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INTRODUCTION TO AIRLINE GROUND SERVICE

Colin Law, Prince of Songkla University, Phuket, Thailand;
Mary Doerflein, Prince of Songkla University, Phuket, Thailand

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Air transportation plays a vital role in a country's economy by enhancing the efficiency and effectiveness of both business and leisure travel. Introduction to Airline Ground Service is written for airline executives, university lecturers and undergraduate students who have the goal of fully preparing to take on the important role of a ground service agent (GSA) in the airline industry. Anyone working in passenger, aircraft, airport, cargo, or baggage operations as well as general communications at an airport can benefit from this book by understanding the typical landside and airside jobs held by the various GSAs. While the book primarily focuses on the passenger aspect of ground service, it does not ignore positions related to baggage, cargo, food, and other supporting positions. How GSAs interact with the passengers at the different points of their airport experience as well as how GSAs work with each other across airline boundaries are both extensively explored. The book is more than a manual or handbook as it includes authentic dialogues and cases from the authors' extensive professional management and traveling experience. By following the route a typical traveler takes through an airport, Introduction to Airline Ground Service covers both the intricate little-known details and essential tasks the various GSAs accomplish in the course of a "normal" workday in an industry that may witness 100,000 or more people traveling through a busy airport per day, and is laden with numerous "non-normal" occurrences. This book uses such first-hand occurrences and situations encountered by the authors to encourage and motivate students to pursue an exciting career in this profession.

CONTENTS

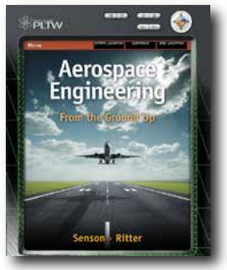
AEROSPACE ENGINEERING

From the Ground Up

Ben Senson, Memorial High School, Madison, Wisconsin; Jasen Ritter, Vandegrift High School, Austin, TX

© 2012, 384pp, Hardback, 9781435447530

ebook



Written with a visual appeal and engaging approach, AEROSPACE ENGINEERING provides an overview of the broad range of science, technology, engineering and mathematics (STEM) applications in aerospace engineering. An extensive overview of the history of aviation and technological innovations demonstrate the progression of aerospace technology. The use of case studies and real world examples further supports your understanding and application of STEM to aerospace engineering. Real world connections combined with narratives make the technical material easier to comprehend. The book includes a complete glossary of all related aerospace terminology as well as firsthand accounts of aerospace professionals in their chosen career along with career opportunities.

CONTENTS

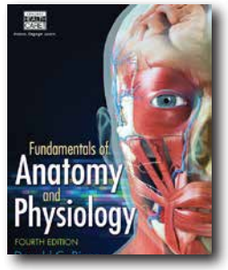
ANATOMY & PHYSIOLOGY

FUNDAMENTALS OF ANATOMY AND PHYSIOLOGY, 4E

Dr. Donald C. Rizzo, Maragrove College

© 2016, 576pp, Paperback, 9781285174150

CENGAGE | MINDTAP *ebook*



Packed with vivid illustrations and a wealth of hands-on applications, best-selling FUNDAMENTALS OF ANATOMY AND PHYSIOLOGY, 4E is written specifically for learners in a one-semester introductory A&P course in the allied health field who have little or no previous knowledge of anatomy and physiology. Known for its clear approach to teaching, the text is widely praised for its ability to break A&P down into very simple, easy to understand language. Content is organized according to body systems and focuses on the body working together to promote homeostasis. Improving both the quality and quantity of text illustrations, the Fourth Edition's new art program brings text concepts to life with new figures throughout. Designed specifically for the needs of health care programs, the all-new Learning Lab's interactive simulation program helps students maximize their learning potential

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Digestive System. 17. The Respiratory System. 18. The Urinary System. 19. The Reproductive System.

BIOLOGY

BIOTECHNOLOGY

INTRODUCTION TO MEDICAL TECHNOLOGY WITH SCIENCE, TECHNOLOGY, AND SOCIETY

Dr. Sally C. Suba; Dr. Jennifer S. Florida

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Advancements in science and technology have brought about numerous remarkable changes in the trends of medical laboratory services. Medical technologists of today are key healthcare personnel who provide laboratory services that aid physicians in diagnosing, treating, and preventing the onset of diseases and infections. Thus, it is crucial that they are well versed in basic theory, technical skills, and the application of laboratory test procedures. Introduction to Medical Technology with Science, Technology, and Society provides students with vital information to guide them in carrying out their duties, and to help them learn in a structured and efficient manner. This book aims to counter the dearth of introductory medical technology texts in the market through the conceptualization of learning materials that fully embrace the core principles of medical technology education.

CONTENTS

UNIT I. Introduction to Medical Technology 1. Medical Technology: Scope, Nature, and Historical Perspective 2. Medical Technologists and Other Allied Health Professionals 3. Medical Technology Education 4. Clinical Laboratory Organization and Quality Control Management 5. Clinical Laboratory Information System and Instrumentation 6. Professional Ethics and Values: Moral Implications UNIT II. Science, Technology, and Society 7. Genetic Engineering 8. Occupational Risks in Medical Technology 9. Laboratory Waste Management Services and Disposal System 10. Disease of the 21st Century 11. Current Trends in Medical Technology 12. The Advent of Molecular Diagnostic Tools App. A. Laboratory Protocol App. B. Chemical Reactions and Principles of Laboratory Protocols App. C. Microscopic and Morphological Appearance of Specimens Index.

ECOLOGY

ESSENTIALS OF ECOLOGY, 7E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2015, 400pp, Paperback, 9781285197265

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"Inspiring people to care about the planet." In the new edition of ESSENTIALS OF ECOLOGY, authors Tyler Miller and Scott Spoolman have partnered with the National Geographic Society to develop a text designed to equip students with the inspiration and knowledge they need to make a difference solving today's environmental issues. Exclusive content highlights important work of National Geographic Explorers, and features over 100 new photos, maps, and illustrations that bring course concepts to life. Using sustainability as the integrating theme, ESSENTIALS OF ECOLOGY 7e, covers scientific principles and concepts, ecosystems, evolution, biodiversity, population ecology, and more. In addition to the integration of new and engaging National Geographic content, every chapter has been thoroughly updated and 6 new Core Case Studies offer current examples of environmental problems and scenarios for potential solutions. The concept-centered approach used in the text transforms complex environmental topics and issues into key concepts that students will understand and remember. Overall, by framing the concepts with goals for more sustainable lifestyles and human communities, students see how promising the future can be and their important role in shaping it.

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PART I: HUMANS AND SUSTAINABILITY: AN OVERVIEW. 1. Environmental Problems, Their Causes, and Sustainability. PART II: SCIENCE, ECOLOGICAL PRINCIPLES, AND SUSTAINABILITY. 2. Science, Matter, Energy, and Systems. 3. Ecosystems: What Are They and How Do They Work? 4. Biodiversity and Evolution. 5. Biodiversity, Species Interactions, and Population Control. 6. The Human Population and Its Impact. 7. Climate and Biodiversity. 8. Aquatic Biodiversity. PART III: SUSTAINING BIODIVERSITY. 9. Sustaining Biodiversity: The Species Approach. 10. Sustaining Terrestrial Biodiversity: The Ecosystem Approach. 11. Sustaining Aquatic Biodiversity.

A GUIDE TO THE COMMON EPIPHYTES AND MISTLETOES OF SINGAPORE

Jean W. H. Yong; James Wang Wei; Joanne Y. T. Khew; Sheue Chiou Rong

© 2015, Paperback, 9789814609777

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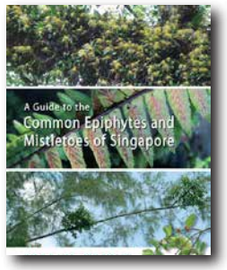

This book is the first to profile the unique epiphytic plant communities found in Singapore. The canopies of tropical trees are often festooned with luxuriant masses of delicate ferns, orchids and mistletoes; these veritable aerial gardens are one of the most biodiverse habitats on the planet. Yet, despite their prevalence in tropical urban landscapes, many of these fascinating aerial plants remain unappreciated and misunderstood. The first section of this book provides a concise scientific introduction to the biology of epiphytes and mistletoes, including their taxonomy, life-cycles, adaptive strategies and interactions with their hosts and arboreal fauna. Biology students will appreciate the clear and systematic treatise of the natural history of these two groups of aerial plants, while horticulturalists will benefit from the balanced discussion on suitable management approaches for these plants. The second section serves as a field guide for identifying all of the common epiphytes and mistletoes found in Singapore. Copious illustrations of both vegetative and fertile characters are provided to enable nature lovers and plant hobbyists to confidently identify all the common species, including epiphytic ferns, orchids, hoyas, dischidias, rubiaceous ant-plants and mistletoes. We hope that landscape architects and private gardeners will also find in this section plant selection ideas for more sustainable greening initiatives, and be inspired to further explore the substantial aesthetic and conservation values of these charming plants.

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ENVIRONMENTAL SCIENCE

ESSENTIALS OF ECOLOGY, 7E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2015, 400pp, Paperback, 9781285197265

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"Inspiring people to care about the planet." In the new edition of ESSENTIALS OF ECOLOGY, authors Tyler Miller and Scott Spoolman have partnered with the National Geographic Society to develop a text designed to equip students with the inspiration and knowledge they need to make a difference solving today's environmental issues. Exclusive content highlights important work of National Geographic Explorers, and features over 100 new photos, maps, and illustrations that bring course concepts to life. Using sustainability as the integrating theme, ESSENTIALS OF ECOLOGY 7e, covers scientific principles and concepts, ecosystems, evolution, biodiversity, population ecology, and more. In addition to the integration of new and engaging National Geographic content, every chapter has been thoroughly updated and 6 new Core Case Studies offer current examples of environmental problems and scenarios for potential solutions. The concept-centered approach used in the text transforms complex environmental topics and issues into key concepts that students will understand and remember. Overall, by framing the concepts with goals for more sustainable lifestyles and human communities, students see how promising the future can be and their important role in shaping it.

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ENVIRONMENTAL ISSUES AND SOLUTIONS

A Modular Approach

Norman Myers; Scott Spoolman

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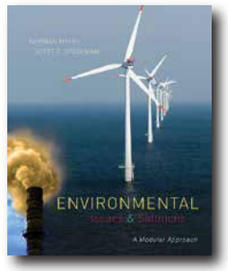

Focused on and organized around environmental issues, this innovative new book helps you critically evaluate possible solutions to the environmental problems we now face. The authors outline specific environmental issues and provide the scientific background to enable you to understand each issue. In order to find and apply solutions to these problems, they help you see that the problems are not insurmountable and that something can be done to achieve a sustainable future. The modular chapters provide full descriptions of each of the major environmental problems with real stories about what people are doing to tackle the resulting challenges. Available with InfoTrac® Student Collections http://gocengage.com/infotrac.

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1. Environmental Science and Sustainability. 2. Population Growth. 3. Urbanization. 4. Food Resources. 5. Energy Efficiency and Renewable Energy. 6. Nonrenewable Energy. 7. Mineral Resources. 8. Species Extinction. 9. Land Degradation. 10. Water Resources. 11. Water Pollution. 12. Air Pollution. 13. Climate Change. 14. Wastes. 15. Environmental Health Hazards.

GENETICS

HUMAN HEREDITY, 11E
Principles and Issues

Michael Cummings, Illinois Institute of Technology

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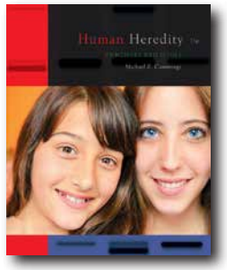

HUMAN HEREDITY presents the concepts of human genetics in clear, concise language and provides relevant examples that you can apply to yourself, your family, and your work environment. Author Michael Cummings explains the origin, nature, and amount of genetic diversity present in the human population and how that diversity has been shaped by natural selection. The artwork and accompanying media visually support the material by teaching rather than merely illustrating the ideas under discussion. Examining the social, cultural, and ethical implications associated with the use of genetic technology, Cummings prepares you to become a well-informed consumer of genetic-based health care services or provider of health care services. Available with InfoTrac® Student Collections http://gocengage.com/infotrac.

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1. A Perspective on Human Genetics. 2. Cells and Cell Division. 3. Transmission of Genes from Generation to Generation. 4. Pedigree Analysis in Human Genetics. 5. The Inheritance of Complex Traits. 6. Cytogenetics: Karyotypes and Chromosome Aberrations. 7. Development and Sex Determination. 8. The Structure, Replication, and Chromosomal Organization of DNA. 9. Gene Expression and Gene Regulation. 10. From Proteins to Phenotypes. 11. Genome Alterations: Mutation and Epigenetics. 12. Genes and Cancer. 13. An Introduction to Genetic Technology. 14. Biotechnology and Society. 15. Genomes and Genomics. 16. Reproductive Technology, Genetic Testing, and Gene Therapy. 17. Genes and the Immune System. 18. Genetics of Behavior. 19. Population Genetics and Human Evolution. Appendix. Glossary. Index.

HUMAN ANATOMY & PHYSIOLOGY

AE HUMAN PHYSIOLOGY: FROM CELLS TO SYSTEMS, 9E

Lauralee Sherwood, West Virginia University

© 2016, 952pp, Paperback, 9789814846431

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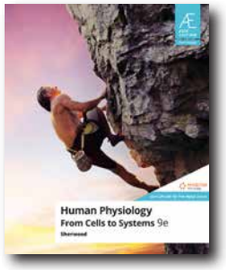

Organized around the central theme of homeostasis, HUMAN PHYSIOLOGY, 9e, helps students appreciate the integrated functioning of the human body. Author Lauralee Sherwood uses clear, straightforward language, analogies, and frequent references to everyday experiences to help students learn and relate to physiology concepts. The vibrant art program and empowering digital resources—including robust 3D animations and rich homework problems—enable students to visualize important concepts and processes. By focusing on core principles and sharing her enthusiasm for the subject matter, Sherwood helps students develop a solid foundation for future courses and careers in the health professions.

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HUMAN PHYSIOLOGY, 9E
From Cells to Systems

Lauralee Sherwood, West Virginia University

© 2016, 912pp, Hardback, 9781285866932

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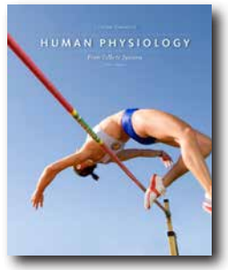

Organized around the central theme of homeostasis—how the body meets changing demands while maintaining the internal constancy necessary for all cells and organs to function—HUMAN PHYSIOLOGY helps you appreciate the integrated functioning of the human body. Author Lauralee Sherwood uses clear, straightforward language, analogies, and frequent references to everyday experiences to help you learn and relate to physiology concepts. The vibrant art program and exciting digital resources—including robust 3D animations and rich homework problems —enable you to visualize important concepts and processes. By focusing on the core principles and sharing her enthusiasm for the subject matter, Sherwood helps you develop a solid foundation for future courses and careers in the health professions.

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UPDATE: ANATOMY & PHYSIOLOGY LABORATORY MANUAL, 8E

Robert Amitrano, Bergen Community College; Gerard Tortora, Bergen Community College

© 2013, 688pp, Spiral, 9781133365488

ebook

Don't go to the lab without it! With coverage of every structure and function of the human body, the ANATOMY AND PHYSIOLOGY LABORATORY MANUAL, provides you with the tools you need to succeed in this course. Lists of terms, diagrams of lab equipment, lab report questions, and report templates found in the manual help you easily and successfully complete your lab experiments and write-up your lab reports.

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UPDATE: LABORATORY EXERCISES IN ANATOMY AND PHYSIOLOGY WITH CAT DISSECTIONS, 8E

Robert Amitrano, Bergen Community College; Gerard Tortora, Bergen Community College

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ebook

If you're taking Anatomy and Physiology, this LABORATORY EXERCISES IN ANATOMY AND PHYSIOLOGY WITH CAT DISSECTIONS lab manual is the perfect partner to help you examine every structure and function of the human body. With lots of vivid illustrations, this useful manual walks you through the dissection of the white rat, includes numerous physiological experiments, an emphasis on the study of anatomy through histology, lists of appropriate terms accompanying art, phonetic pronunciation and derivation of terms, lab report questions, and report templates. The manual has a greatly improved art program with detailed anatomical drawings, diagrams, photographs, photomicrographs, and scanning electron micrographs that help you see how the structures of the body actually look. For those courses that cover cat dissection, exercises are included.

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Reproductive Systems. A. Organs of Male Reproductive System. B. Organs of Female Reproductive System. C. Dissection of Cat Reproductive Systems. D. Dissection of Fetus-Containing Pig Uterus. EXERCISE 26. Development. A. Spermatogenesis. B. Oogenesis. C. Embryonic Period. D. Fetal Period. Appendix A: Some Important Units of Measurement. Appendix B: Periodic Table of the Elements. Appendix C: Eponyms Used in This Laboratory Manual. Figure Credits. Index.

FUNDAMENTALS OF HUMAN PHYSIOLOGY, 4E

Lauralee Sherwood, West Virginia University

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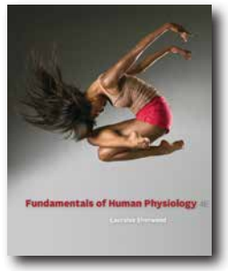

FUNDAMENTALS OF HUMAN PHYSIOLOGY provides clear, current, concise, clinically oriented coverage of physiology. It focuses on the mechanisms of body function from cells to systems and is organized around the central theme of homeostasis -- how the body meets changing demands while maintaining the internal constancy necessary for all cells and organs to function. Many analogies and frequent references to everyday experiences help you relate to the physiology concepts presented. Offering helpful art and pedagogical features, Sherwood promotes understanding of the basic principles and concepts of physiology rather than memorization of details and provides you with a foundation for a future career in the health professions.

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HUMAN BIOLOGY

HUMAN BIOLOGY, 11E

Cecie Starr, N/A; Beverly McMillan, University of California

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Clear, engaging, and visually compelling, Starr and McMillan's HUMAN BIOLOGY teaches you the core concepts of human biology and prepares you to make well-informed decisions in your life. Each chapter opens with an interesting application that highlights the relevance of biology and motivates the study of the topic. You then learn basic concepts which help you think critically about these issues. Useful learning aids, such as section-ending "Take-Home Messages" and a running glossary help you understand key concepts. New "Focus on Human Impact" boxes and chapter-ending "Your Future" and "Explore on Your Own" sections demonstrate the impact and personal relevance of the content on your life. Available with InfoTrac® Student Collections http://gocengage.com/infotrac.

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1. Learning about Human Biology. 2. Chemistry of Life. 3. Cells and How They Work. 4. Tissues, Organs, and Organ Systems. 5. The Skeletal System. 6. The Muscular System. 7. Circulation: The Heart and Blood Vessels. 8. Blood. 9. Immunity and Disease. 10. The Respiratory System. 11. Digestion and Nutrition. 12. The Urinary System. 13. The Nervous System. 14. Sensory Systems. 15. The Endocrine System. 16. Reproductive Systems. 17. Development and Aging. 18. Cell Reproduction. 19. Introduction to Genetics. 20. Chromosomes and Human Genetics. 21. DNA, Genes, and Biotechnology. 22. Genes and Disease: Cancer. 23. Principles of Evolution. 24. Principles of Ecology. 25. Human Impacts on the Biosphere.

LABORATORY MANUAL FOR HUMAN BIOLOGY, 2E

David Morton, Frostburg State University; Joy B. Perry, University of Wisconsin - Fox Valley; James W. Perry, University of Wisconsin - Fox Valley

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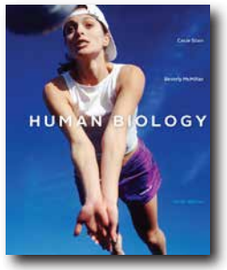

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CONTENTS

1. Learning About the Natural World. 2. Observing Microscopic Details of the Natural World. 3. Chemistry of Life: Biological Molecules and Diet Analysis. 4. Cell Structure. 5. Cell Membranes and How They Work. 6. Enzymes, the Catalysts of Life. 7. Homeostasis. 8. How Mammals Are Constructed. 9. Support and Movement: Human Skeletal and Muscular Systems. 10. External Anatomy and Organs of the Digestive and Respiratory, Systems. 11. Organs of the Circulatory, Urinary, and Reproductive Systems. 12. Human Blood and Circulation. 13. Human Respiration. 14. Human Sensations, Reflexes, and Reactions. 15. Sensory Organs. 16. Reproduction and Development. 17. Cell Reproduction. 18. Human Heredity. 19. DNA, Genes, Cancer and Biotechnology. 20. Evidences of Evolution. 21. Human Impact on the Environment. APPENDIX 1: Measurement Conversions. APPENDIX 2: Terms of Orientation in and Around the Animal Body.

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NEW EDITION

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The Dynamic Science

Peter J. Russell, Reed College; Paul E. Hertz, Barnard College; Beverly McMillan, University of California; Joel H. Benington, St. Bonaventure University

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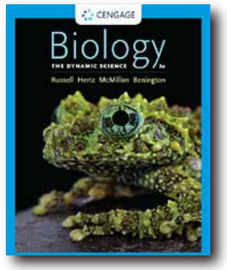

This updated Fifth Edition of BIOLOGY: THE DYNAMIC SCIENCE is a readable and understandable foundation for introductory biology students. Clarity of presentation, thoughtful organization, a logical and seamless flow of topics within chapters, and carefully designed illustrations are hallmarks of this text. The accompanying MindTap for Biology includes multimedia instruction, assessments, videos, personalized study tools and more. With this easy-to-read, engaging text, you'll leave your introductory biology course armed with intellectual skills that will enable you to evaluate future knowledge with a critical eye.

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1. Introduction to Biological Concepts and Research. UNIT ONE: MOLECULES AND CELLS. 2. Life, Chemistry, and Water. 3. Biological Molecules: The Carbon Compounds of Life. 4. Cells. 5. Membranes and Transport. 6. Energy, Enzymes, and Biological Reactions. 7. Cellular Respiration: Harvesting Chemical Energy. 8. Photosynthesis. 9. Cell Communication. 10. Cell Division and Mitosis. UNIT TWO: GENETICS. 11. Meiosis: The Cellular Basis of Sexual Reproduction. 12. Mendel, Genes, and Inheritance. 13. Genes, Chromosomes, and Human Genetics. 14. DNA Structure, Replication, and Organization. 15. Gene Expression: From DNA to Protein. 16. Regulation of Gene Expression. 17. Bacterial and Viral Genetics. 18. DNA Technology: Making and Using Genetically Altered Organisms, and Other Applications. 19. Genomes and Proteomes. UNIT THREE: EVOLUTIONARY BIOLOGY. 20. The Development of Evolutionary Thought. 21. Microevolution: Genetic Changes within Populations. 22. Speciation. 23. Paleobiology and Macroevolution. 24. Systematic Biology: Phylogeny and Classification. UNIT FOUR: BIODIVERSITY. 25. The Origin of Life. 26. Prokaryotes and Viruses. 27. Protists. 28. Seedless Plants. 29. Seed Plants. 30. Fungi. 31. Animal Phylogeny, Acoelomates, and Protostomes. 32. Deuterostomes: Vertebrates and Their Closest Relatives. UNIT FIVE: PLANT STRUCTURE AND FUNCTION. 33. The Plant Body. 34. Transport in Plants. 35. Plant Nutrition. 36. Reproduction and Development in Flowering Plants. 37. Plant Signals and Responses to the Environment. UNIT SIX: ANIMAL STRUCTURE AND FUNCTION. 38. Introduction to Animal Organization and Physiology. 39. Information Flow and the Neuron. 40. Nervous Systems. 41. Sensory Systems. 42. The Endocrine System. 43. Muscles, Bones, and Body Movements 44. The Circulatory System. 45. Defenses against Disease. 46. Gas Exchange: The Respiratory System. 47. Digestive Systems and Animal Nutrition. 48. Regulating the Internal Environment: Osmoregulation, Excretion, and Thermoregulation. 49. Animal Reproduction. 50. Animal Development. UNIT SEVEN: ECOLOGY AND BEHAVIOR. 51. Ecology and the Biosphere. 52. Population Ecology. 53. Population Interactions and Community Ecology. 54. Ecosystems. 55. Biodiversity and Conservation Biology. 56. Animal Behavior.

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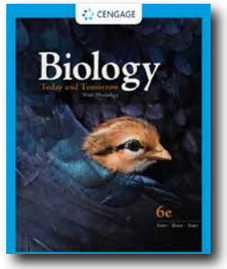

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AE BIOLOGY, 11E

Eldra Solomon, University of South Florida; Charles Martin, Rutgers University; Diana W. Martin, Rutgers University; Linda R. Berg, Formerly, University of Maryland and St. Petersburg College

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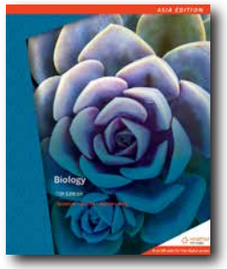

Solomon, Martin, Martin and Berg's BIOLOGY--often described as the best majors' text for learning Biology--is also a complete teaching program. The integrated, inquiry-based learning system guides students through every chapter, starting with key concepts at the beginning of each chapter and learning objectives for each section. End-of-section Checkpoint questions encourage students to review key points before moving on. A chapter summary further reinforces learning objectives, followed by an opportunity for students to test their understanding. The eleventh edition offers expanded integration of the text's five guiding themes of Biology--the evolution of life, the transmission of biological information, the flow of energy through living systems, interactions among biological systems and the inter-relationship of structure and function. Available with MindTap Biology, the platform that gives instructors complete control of their course and powers students from memorization to mastery.

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Cecie Starr, N/A; Ralph Taggart, Michigan State University; Christine Evers, N/A; Lisa Starr, N/A

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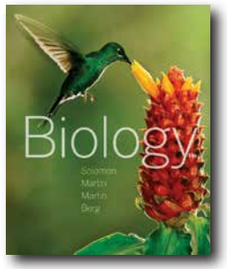

So you plan on majoring in Biology. Why wouldn't you want to use what's been described as the best majors' text for learning the subject? That's what you get with Solomon, Martin, Martin and Berg's BIOLOGY. Working like a built-in study guide, the integrated learning system guides you through the material, starting with key concepts for each chapter and learning objectives for each section. Check your grasp of key points before moving on by answering Checkpoint questions at the end of each section. Reinforce your understanding of the learning objectives with chapter summaries, followed by the opportunity to test your new knowledge. To further help you "get it," the eleventh edition uses themes--among others, the evolution of life and the inter-relationship of structure and function--as well as interactive online and multimedia resources. Ready to go for it? Then go for BIOLOGY.

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BIOLOGY, 15E

The Unity and Diversity of Life

Cecie Starr, N/A; Ralph Taggart, Michigan State University; Christine Evers, N/A; Lisa Starr, N/A

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Cecie Starr, N/A; Christine Evers, N/A; Lisa Starr, N/A

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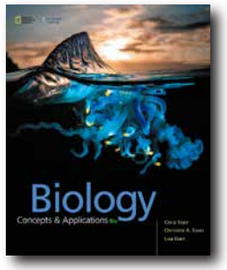

Should there be warning labels on fast foods? Should employers be allowed to require drug testing? This introductory text teaches you basic concepts of biology in context of critical issues. The Tenth Edition of BIOLOGY: CONCEPTS AND APPLICATIONS was developed in partnership with the National Geographic Society, known for its eye-opening photography and legacy of inspiring people. The result is a text that combines clear explanations with unparalleled visuals to introduce the process of science and core concepts of biology. "Engage" boxes help you see chapter concepts being put to work in the real world; "Learning Objectives" help focus your studying; "Applications" bring chapter content to real life; "Figure It Out" questions help you check understanding; and "Data Analysis" activities strengthen your analytical skills. This book is widely praised for clear and engaging writing, exceptional art, and terrific support from media that all work together to help you "get" biology.

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BIOLOGY

Organisms and Adaptations, Media Update, Enhanced Edition

Robert K. Noyd; Jerome A. Krueger; Kendra M. Hill

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The Enhanced Media Edition of BIOLOGY: ORGANISMS AND ADAPTATIONS captures your passion and excitement for the living world! The authors build on the connection we all have to nature to inspire you to engage with biology in the same way you do when visiting zoos, aquariums, or just taking a walk in the park. Each chapter uses fascinating organisms such as blue whales, salamanders, and redwood trees to present, organize, and integrate biological concepts. Merging the excitement and passion for living things with an understanding of biological concepts, this highly accessible and practical approach to the study of biology develops scientific literacy and connective thinking. The Enhanced Media Edition is a fully integrated package of print and media with comprehensive learning tools.

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BIOLOGY, 10E

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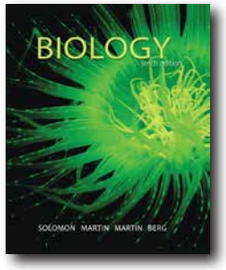

Solomon/Martin/Martin/Berg, BIOLOGY is often described as the best majors text for LEARNING biology. Working like a built-in study guide, the superbly integrated, inquiry-based learning system guides you through every chapter. Key concepts appear clearly at the beginning of each chapter and learning objectives start each section. You can quickly check the key points at the end of each section before moving on to the next one. At the end of the chapter, a specially focused summary provides further reinforcement of the learning objectives and you are given the opportunity to test your understanding of the material. The tenth edition offers expanded integration of the text's five guiding themes of biology (the evolution of life, the transmission of biological information, the flow of energy through living systems, interactions among biological systems, and the inter-relationship of structure and function) and innovative online and multimedia resources.

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BIOLOGY, 9E

Concepts and Applications

Cecie Starr, N/A; Christine Evers, N/A; Lisa Starr, N/A

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BIOLOGY: CONCEPTS AND APPLICATIONS, now developed in partnership with the National Geographic Society is a modular text with enormous instructional power for non-majors biology courses.

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BIOLOGY, 9E

A Human Emphasis

Cecie Starr, N/A; Christine Evers, N/A; Lisa Starr, N/A

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In the new edition of BIOLOGY: A HUMAN EMPHASIS, authors Cecie Starr, Christine A. Evers, and Lisa Starr have partnered with the National Geographic Society to develop a text designed to engage and inspire. This trendsetting text introduces the key concepts of biology using clear explanations and unparalleled visuals. While mastering core concepts, each chapter challenges learners to question what they read and apply the concepts learned, providing critical-thinking skills and science knowledge needed in life. Renowned for its writing style the new edition is enhanced with exclusive content from the National Geographic Society, including over 200 new photos and illustrations. New "People Matter" sections in most chapters profile National Geographic Explorers and Grantees who are making significant contributions in their field, showing how concepts in the chapter are being applied in biological research. Each chapter concludes with an "Application" section highlighting real-world uses of biology that helps make connections to chapter content. Providing selected chapters from BIOLOGY: CONCEPTS AND APPLICATIONS, this text is ideal for emphasizing human applications.

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BIOLOGY TODAY AND TOMORROW WITH PHYSIOLOGY, 4E

Cecie Starr, N/A; Christine Evers, N/A

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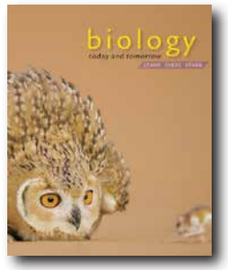

BIOLOGY TODAY AND TOMORROW is packed with applications that are relevant to your daily life. The clear, straightforward writing style, in-text learning support, and trendsetting art help you understand key biological concepts. The accompanying MindTap for Biology further improves comprehension with conceptually based exercises and immediate feedback. Overall, this accessible and engaging introduction to biology provides an understanding of biology and the process of science while developing the critical-thinking skills.

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1. Invitation to Biology. 2. Molecules of Life. 3. Cell Structure. 4. Energy and Metabolism. 5. Capturing and Releasing Energy. 6. DNA Structure and Function. 7. Gene Expression and Control. 8. How Cells Reproduce. 9. Patterns of Inheritance. 10. Biotechnology. 11. Evidence of Evolution. 12. Processes of Evolution. 13. Early Life Forms and the Viruses. 14. Plants and Fungi. 15. Animal Evolution. 16. Population Ecology. 17. Communities and Ecosystems. 18. The Biosphere and Human Effects. 19. Animal Tissues and Organs. 20. How Animals Move. 21. Circulation and Respiration. 22. Immunity. 23. Digestion and Excretion. 24. Neural Control and the Senses. 25. Endocrine Control. 26. Reproduction and Development. 27. Plant Form and Function. 28. Plant Reproduction and Development.

LABORATORY MANUAL FOR NON-MAJORS BIOLOGY, 6E

James W. Perry, University of Wisconsin - Fox Valley; David Morton, Frostburg State University; Joy B. Perry, University of Wisconsin - Fox Valley

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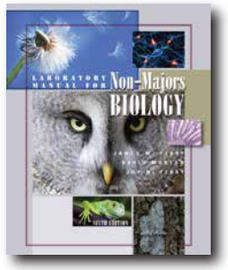

Succeed in biology with LABORATORY MANUAL FOR NON-MAJORS BIOLOGY! Through hands-on lab experience, this biology laboratory manual reinforces biology concepts to help you get a better grade. Exercises, pre-lab questions, and post-lab questions enhance your understanding and make lab assignments easy to complete and easy to comprehend.

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Preface. To the Student. Laboratory Supplies and Procedures. EXERCISE 1 The Scientific Method. EXERCISE 2 Measurement. EXERCISE 3 Microscopy. EXERCISE 4 Homeostasis. EXERCISE 5 Macromolecules and You: Food and Diet Analysis. EXERCISE 6 Structure and Function of Living Cells. EXERCISE 7 Diffusion, Osmosis, and the Functional Significance of Biological Membranes. EXERCISE 8 Enzymes: Catalysts of Life. EXERCISE 9 Photosynthesis: Capture of Light Energy. EXERCISE 10 Respiration: Energy Conversion. EXERCISE 11 Mitosis and Cytokinesis: Nuclear and Cytoplasmic Division. EXERCISE 12 Meiosis: Basis of Sexual Reproduction. EXERCISE 13 Heredity. EXERCISE 14 Nucleic Acids: Blueprints for Life. EXERCISE 15 Genetic Engineering: Bacterial Transformation. EXERCISE 16 Evolutionary Agents. EXERCISE 17 Evidences of Evolution. EXERCISE 18 Taxonomy: Classifying and Naming Organisms. EXERCISE 19 Bacteria and Protists I. EXERCISE 20 Protists II. EXERCISE 21 Bryophytes—Liverworts and Mosses. EXERCISE 22 Seedless Vascular Plants: Club Mosses and Ferns. EXERCISE 23 Seed Plants I: Gymnosperms. EXERCISE 24 Seed Plants II: Angiosperms. EXERCISE 25 Fungi. EXERCISE 26 Sponges and Cnidarians. EXERCISE 27 Flatworms and Rotifers. EXERCISE 28 Segmented Worms and Mollusks. EXERCISE 29 Roundworms and Joint-Legged Animals. EXERCISE 30 Echinoderms and Invertebrate Chordates. EXERCISE 31 Vertebrates. EXERCISE 32 Plant Organization: Vegetative Organs of Flowering Plants. EXERCISE 33 Animal Organization. EXERCISE 34 Dissection of the Fetal Pig: Introduction, External Anatomy, and the Muscular System. EXERCISE 35 Dissection of the Fetal Pig: Digestive, Respiratory, and Circulatory Systems. EXERCISE 36 Dissection of the Fetal Pig: Urogenital and Nervous Systems. EXERCISE 37 Human Sensations, Reflexes, and Reactions. EXERCISE 38 Structure and Function of the Sensory Organs. EXERCISE 39 Human Skeletal and Muscular Systems. EXERCISE 40 Human Blood and Circulation. EXERCISE 41 Human Respiration. EXERCISE 42 Reproduction and Development. EXERCISE 43 The Natural Arsenal: An Experimental Study of the Relationships Between Plants and Animals. EXERCISE 44 Ecology: Living Organisms in Their Environment. EXERCISE 45 Human Impact on the Environment. EXERCISE 46 Animal Behavior. APPENDIX 1 Measurement Conversions. APPENDIX 2 Genetics Problems. APPENDIX 3 Terms of Orientation in and Around the Animal Body. Illustration References

BIOLOGY, 8E

Concepts and Applications

Cecie Starr, N/A; Christine Evers, N/A; Lisa Starr, N/A

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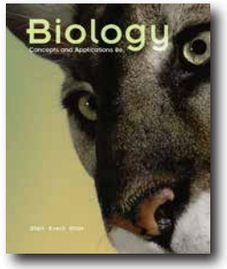

Clear, engaging, and visual, BIOLOGY: CONCEPTS AND APPLICATIONS is a modular text with enormous instructional power for non-majors biology courses.

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LAB MANUAL FOR MAJORS GENERAL BIOLOGY

James W. Perry, University of Wisconsin - Fox Valley; David Morton, Frostburg State University; Joy B. Perry, University of Wisconsin - Fox Valley

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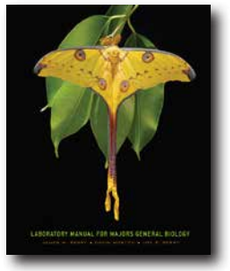

Featuring a clear format and a wealth of illustrations, this lab manual helps biology majors learn science by doing it. This manual includes numerous inquiry-based experiments, relevant activities, and supporting questions that assess recall, understanding, and application. The exercises support any biology text used in a majors course.

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1. Microscopy. 2. Macromolecules and You: Food and Diet Analysis. 3. Structure and Function of Living Cells. 4. Diffusion, Osmosis, and the Functional Significance of Biological Membranes. 5. Enzymes: Catalysts of Life. 6. Photosynthesis: Capture of Light Energy. 7. Respiration: Energy Conversion. 8. Mitosis, Meiosis, and Cytokinesis. 9. Heredity, Nucleic Acids, & Biotechnology. 10. Evolutionary Agents. 11. Evidences of Evolution. 12. Taxonomy: Classifying and Naming Organisms. 13. Bacteria and Protists. 14. Fungi. 15. Bryophytes and Seedless Vascular Plants. 16. Seed Plants I: Gymnosperms. 17. Seed Plants II: Angiosperms. 18. Sponges, Cnidarians, Flatworms, and Rotifers. 19. Segmented Worms, Mollusks, Roundworms, and Joint-Legged Animals. 20. Echinoderms, Invertebrate Chordates, and Vertebrates. 21. Plant and Animal Organization. 22. Dissection of the Fetal Pig. 23. Human Sensations, Reflexes, Reactions, and the Structure and Function of Sensory Organs. 24. Human Skeletal and Muscular Systems. 25. Human Blood, Circulation, and Respiration. 26. Animal Development. 27. The Natural Arsenal: An Experimental Study of the Relationships Between Plants and Animals. 28. Ecology: Living Organisms in Their Environment. 29. Human Impact on the Environment: Stream and Pond Ecology. 30. Animal Behavior. Appendix 1: Measurement Conversions. Appendix 2: The Scientific Method. Appendix 3: Scientific Writing and Critiquing. Appendix 4: Statistics and Graphing with Excel. Appendix 5: Using Inquiry-Based Module Reports. Appendix 6: Genetics Problems. Appendix 7: Terms of Orientation in and Around the Animal Body.

LABORATORY MANUAL FOR GENERAL BIOLOGY, 5E

James W. Perry, University of Wisconsin - Fox Valley; David Morton, Frostburg State University; Joy B. Perry, University of Wisconsin - Fox Valley

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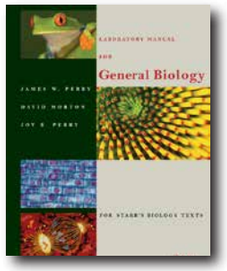

This full-color lab manual complements the Brooks/Cole introductory biology texts and offers 46 exercises with step-by-step procedures designed to be completed within two hours. Brooks/Cole is a part of Cengage Learning.

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MARINE BIOLOGY

LAB MANUAL FOR KARLESKINT/ TURNER/SMALL'S INTRODUCTION TO MARINE BIOLOGY, 4TH, 4E

George Karleskint, St. Louis Community College, Meramec; Richard Turner, Florida Institute of Technology; James Small, Rollins College, Winter Park

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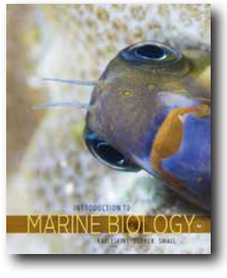

New to this edition, this lab manual has been specially designed to help students learn more about marine life and their habits.

NATIONAL GEOGRAPHIC LEARNING READER

Climate Change Printed Access Card

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PLANT BIOLOGY / BOTANY

A GUIDE TO THE COMMON EPIPHYTES AND MISTLETOES OF SINGAPORE

Jean W. H. Yong; James Wang Wei; Joanne Y. T. Khew; Sheue Chiou Rong

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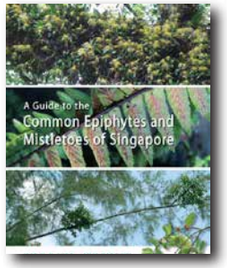

This book is the first to profile the unique epiphytic plant communities found in Singapore. The canopies of tropical trees are often festooned with luxuriant masses of delicate ferns, orchids and mistletoes; these veritable aerial gardens are one of the most biodiverse habitats on the planet. Yet, despite their prevalence in tropical urban landscapes, many of these fascinating aerial plants remain unappreciated and misunderstood. The first section of this book provides a concise scientific introduction to the biology of epiphytes and mistletoes, including their taxonomy, life-cycles, adaptive strategies and interactions with their hosts and arboreal fauna. Biology students will appreciate the clear and systematic treatise of the natural history of these two groups of aerial plants, while horticulturalists will benefit from the balanced discussion on suitable management approaches for these plants. The second section serves as a field guide for identifying all of the common epiphytes and mistletoes found in Singapore. Copious illustrations of both vegetative and fertile characters are provided to enable nature lovers and plant hobbyists to confidently identify all the common species, including epiphytic ferns, orchids, hoyas, dischidias, rubiaceous ant-plants and mistletoes. We hope that landscape architects and private gardeners will also find in this section plant selection ideas for more sustainable greening initiatives, and be inspired to further explore the substantial aesthetic and conservation values of these charming plants.

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STUDENT RESOURCES

LAB MANUAL FOR MAJORS GENERAL BIOLOGY

James W. Perry, University of Wisconsin - Fox Valley; David Morton, Frostburg State University; Joy B. Perry, University of Wisconsin - Fox Valley

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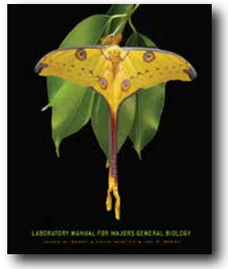

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and Seedless Vascular Plants. 16. Seed Plants I: Gymnosperms. 17. Seed Plants II: Angiosperms. 18. Sponges, Cnidarians, Flatworms, and Rotifers. 19. Segmented Worms, Mollusks, Roundworms, and Joint-Legged Animals. 20. Echinoderms, Invertebrate Chordates, and Vertebrates. 21. Plant and Animal Organization. 22. Dissection of the Fetal Pig. 23. Human Sensations, Reflexes, Reactions, and the Structure and Function of Sensory Organs. 24. Human Skeletal and Muscular Systems. 25. Human Blood, Circulation, and Respiration. 26. Animal Development. 27. The Natural Arsenal: An Experimental Study of the Relationships Between Plants and Animals. 28. Ecology: Living Organisms in Their Environment. 29. Human Impact on the Environment: Stream and Pond Ecology. 30. Animal Behavior. Appendix 1: Measurement Conversions. Appendix 2: The Scientific Method. Appendix 3: Scientific Writing and Critiquing. Appendix 4: Statistics and Graphing with Excel. Appendix 5: Using Inquiry-Based Module Reports. Appendix 6: Genetics Problems. Appendix 7: Terms of Orientation in and Around the Animal Body.

CHEMISTRY

ALLIED HEALTH CHEMISTRY

INTRODUCTION TO GENERAL, ORGANIC, AND BIOCHEMISTRY, 12E

Frederick A. Bettelheim, Adelphi University; William H. Brown, Beloit College; Mary K. Campbell, Mount Holyoke College; Shawn O. Farrell, Olympic Training Center

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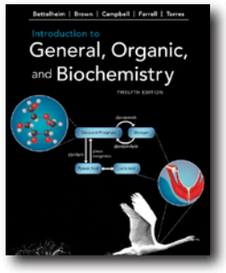

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STUDENT SOLUTIONS MANUAL FOR BETTELHEIM/BROWN/CAMPBELL/ FARRELL/TORRES' INTRODUCTION TO GENERAL, ORGANIC, AND BIOCHEMISTRY, 12E

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CHEMISTRY FOR TODAY, 9E

General, Organic, and Biochemistry

Spencer L. Seager, Weber State University; Michael R. Slabaugh , University of South Dakota; Maren S. Hansen, West High School, Salt Lake City, UT

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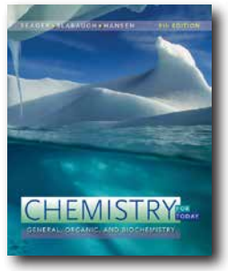

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24. Lipid and Amino Acid Metabolism. 25. Body Fluids. Appendix A: The International System of Measurements. Appendix B: Answers to Even-Numbered End-of-Chapter Exercises. Appendix C: Solutions to Learning Checks. Glossary. Index.

SAFETY-SCALE LABORATORY EXPERIMENTS FOR CHEMISTRY FOR TODAY, 9E

Spencer L. Seager, Weber State University; Michael R. Slabaugh , University of South Dakota; Maren S. Hansen, West High School, Salt Lake City, UT

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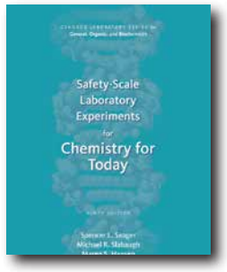

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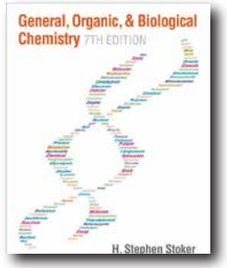

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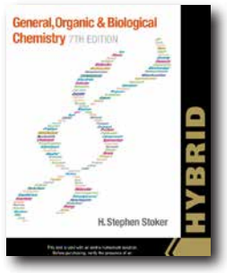

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INTRODUCTION TO GENERAL, ORGANIC AND BIOCHEMISTRY, 11E

Frederick A. Bettelheim, Adelphi University; William H. Brown, Beloit College; Mary K. Campbell, Mount Holyoke College; Shawn O. Farrell, Olympic Training Center

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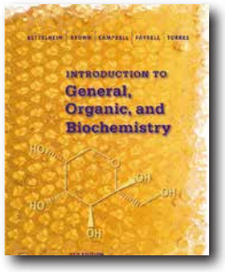

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LAB MANUAL FOR STOKER'S GENERAL, ORGANIC, AND BIOLOGICAL CHEMISTRY, 7TH, 7E

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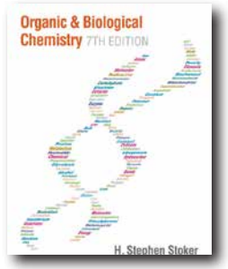

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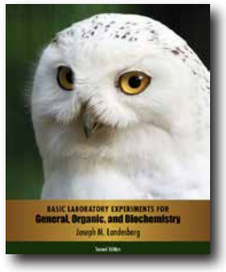

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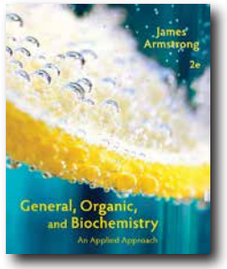

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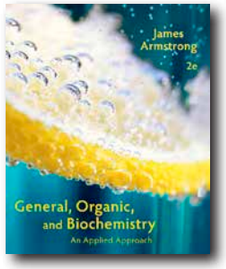

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STUDENT SOLUTIONS MANUAL FOR ARMSTRONG'S GENERAL, ORGANIC, AND BIOCHEMISTRY: AN APPLIED APPROACH, 2ND, 2E

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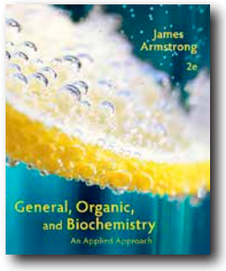

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Frederick A. Bettelheim, Adelphi University; Joseph M. Landesberg, Adelphi University

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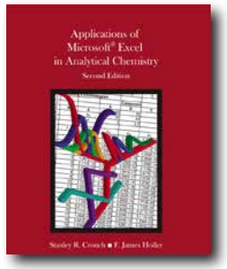

This supplement can be used in any analytical chemistry course. The exercises teaches you how to use Microsoft® Excel® using applications from statistics, data analysis equilibrium calculations, curve fitting, and more. Operations include everything from basic arithmetic and cell formatting to Solver, Goal Seek, and the Data Analysis Toolpak. The authors show you how to use a spreadsheet to construct log diagrams and to plot the results. Statistical data treatment includes descriptive statistics, linear regression, hypothesis testing, and analysis of variance. Tutorial exercises include nonlinear regression such as fitting the Van Deemter equation, fitting kinetics data, determining error coefficients in spectrophotometry, and calculating titration curves. Additional features include solving complex systems of equilibrium equations and advanced graphical methods: error bars, charts with insets, matrices and determinants, and much more.

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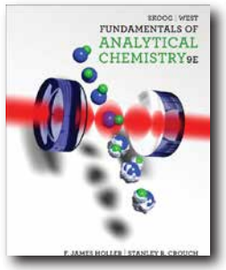

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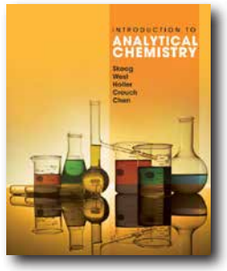

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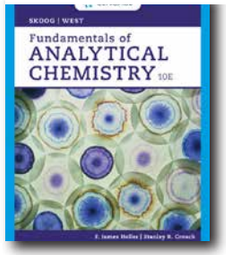

BIOCHEMISTRY

AE BIOCHEMISTRY, 9E

Mary K. Campbell, Mount Holyoke College; Shawn O. Farrell, Olympic Training Center; Owen McDougal Dr., Boise State University

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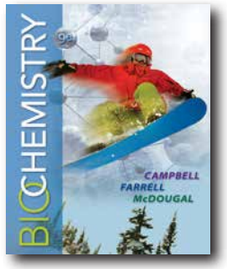

Ideal for those studying biochemistry for the first time, this proven book balances scientific detail with readability and shows you how principles of biochemistry affect your everyday life. Designed throughout to help you succeed (and excel!), the book includes in-text questions that help you master key concepts, end-of-chapter problem sets grouped by problem type that help you prepare for exams, and state-of-the art visuals that help you understand key processes and concepts. In addition, visually dynamic "Hot Topics" cover the latest advances in the field, while "Biochemical Connections" demonstrate how biochemistry affects other fields, such as health and sports medicine. The accompanying OWL homework offers end-of-chapter problems in digital form, giving you on-demand access to hints, solutions, and other information directly related to the problem.

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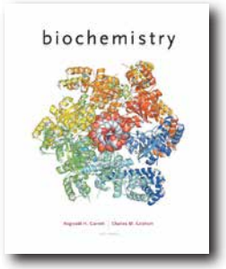

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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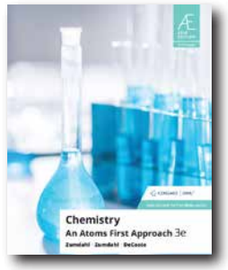

Renowned author team, Steve and Susan Zumdahl have for decades focused on helping students build critical-thinking skills while learning to "think like chemists." This focus on conceptual understanding and strong problem-solving orientation provides students the building blocks towards gaining mastery. In this third edition of CHEMISTRY: AN ATOMS FIRST APPROACH, Steve and Susan Zumdahl, with new co-author Don DeCoste, place special emphasis on the fluidity of topics, guiding students through the concept of molecules, structure and bonding to more complex materials and their properties. This text is enhanced with interactive resources available in OWLv2, a powerful online learning system with richly dynamic problems and newly enhanced content that features a wider range of quality feedback and point-of-use remediation.

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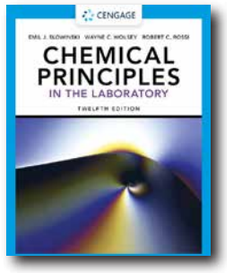

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CHEMISTRY, 3E

An Atoms First Approach

Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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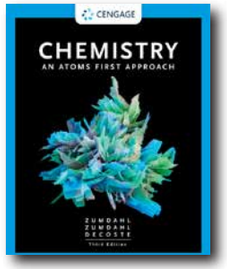

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Review: Measurement and Calculations in Chemistry. 1. Chemical Foundations. 2. Atomic Structure and Periodicity. 3. Bonding: General Concepts. 4. Molecular Structure and Orbitals. 5. Stoichiometry. 6. Types of Chemical Reactions and Solution Stoichiometry. 7. Chemical Energy. 8. Gases. 9. Liquids and Solids. 10. Properties of Solutions. 11. Chemical Kinetics. 12. Chemical Equilibrium. 13. Acids and Bases. 14. Acid-Base Equilibria. 15. Solubility and Complex Ion Equilibria. 16. Spontaneity, Entropy, and Free Energy. 17. Electrochemistry. 18. The Nucleus: A Chemist's View. 19. The Representative Elements. 20. Transition Metals and Coordination Chemistry. 21. Organic and Biological Molecules.

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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Study more effectively and improve your performance at exam time with this comprehensive guide. The study guide includes chapter summaries that highlight the main themes, study goals with section references, solutions to all textbook Example problems, and over 1,500 practice problems for all sections of the textbook. The Study Guide helps you organize the material and practice applying the concepts of the core text.

AE CHEMISTRY, 10E

Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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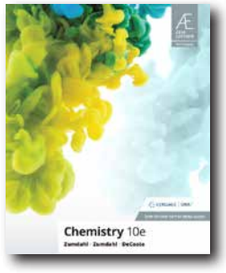

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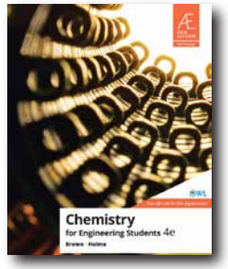

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John C. Kotz, State University of New York, Oneonta; Paul M. Treichel, University of Wisconsin, Madison; John Townsend, West Chester University of Pennsylvania; David Treichel, Nebraska Wesleyan University

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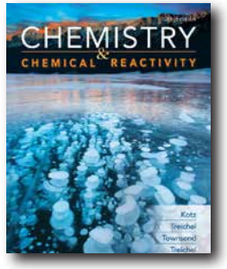

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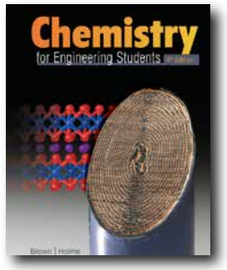

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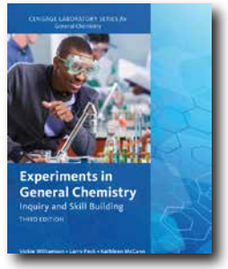

Maximize your skills and understanding with EXPERIMENTS IN GENERAL CHEMISTRY: INQUIRY AND SKILL BUILDING, Third Edition. The manual's 31 experiments include Skill Building, Guided Inquiry, and Open Inquiry experiments to provide maximum lab experience in the minimum amount of lab time. Each experiment includes prelab questions to help you prepare for the lab ahead of time and post-lab questions that lead you from data analysis to concept development to reinforce the core concepts of the lab.

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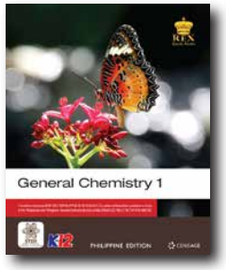

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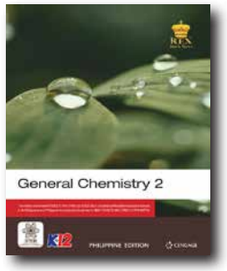

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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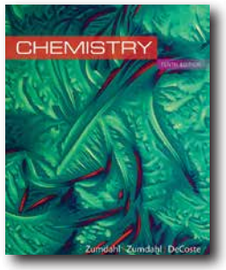

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Susan Young; William Vining, State University of New York at Oneonta; Roberta Day, Professor Emeritus, University of Massachusetts; Beatrice Botch, University of Massachusetts, Amherst

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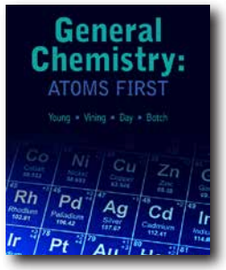

This print companion to MindTap for General Chemistry presents the narrative, figures, tables, and example problems—but no graded problems or assessments. You will need a MindTap access code to complete the interactive activities, exercises, and assignments. MindTap General Chemistry: Atoms First is a new homework platform and interactive textbook designed to help you study better. MindTap organizes your homework and readings in short, manageable chunks so that you read a little, then do a little. The learning path ramps up your knowledge so that you first learn essential concepts and skills before moving onto more advanced problems like the ones you might get on an exam. There's also a MindTap Mobile App to keep you connected with important reminders and on-demand study tools. It's time to say goodbye to your textbook, and say hello to MindTap General Chemistry!

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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This guide contains questions and activities to help you consider underlying concepts for understanding chemistry.

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LAB MANUAL FOR ZUMDAHL/ ZUMDAHL/DECOSTE'S CHEMISTRY, 10TH EDITION, 10E

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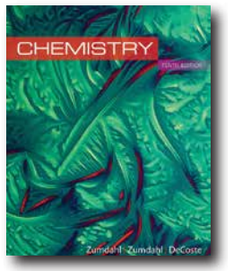

Build skill and confidence in the lab with the 59 experiments included in this manual. Safety is strongly emphasized throughout the lab manual.

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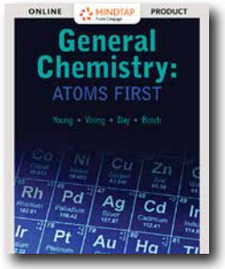

MindTap General Chemistry: Atoms First is a new homework platform and interactive textbook designed to help you study better. MindTap organizes your homework and readings in short, manageable chunks so that you read a little, then do a little. The learning path ramps up your knowledge so that you first learn essential concepts and skills before moving onto more advanced problems like the ones you might get on an exam. Unlike a traditional course, you will learn about atoms and molecules earlier in the semester, helping you gain a better framework to succeed in the course. There's also a MindTap Mobile App to keep you connected with important reminders and on-demand study tools. It's time to say goodbye to your textbook, and say hello to MindTap General Chemistry!

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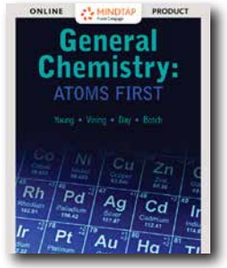

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STUDENT SOLUTIONS MANUAL FOR ZUMDAHL/ZUMDAHL/DECOSTE'S CHEMISTRY, 10TH EDITION, 10E

Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Susan A. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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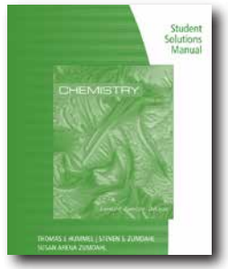

Contains fully worked-out solutions to all of the odd-numbered exercises in the text, giving you a way to check your answers.

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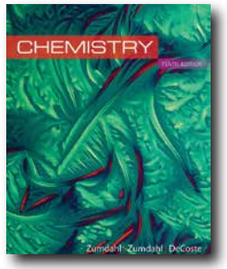

This guide includes a variety of study aids to help you master the course material, whatever your learning style. You'll find chapter outlines and summaries, learning objectives, definitions of major terms and figures, and self-tests -- featuring questions correlated to the learning objectives as well as answers so you can gauge your understanding.

AE CHEMICAL PRINCIPLES, 8E

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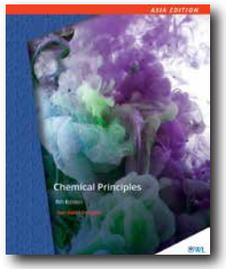

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign;
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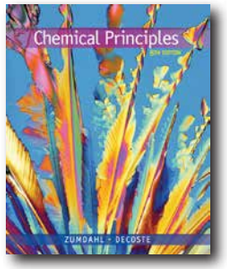

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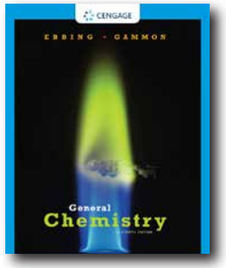

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Answers to Exercises. Answers to Concept Checks. Answers to Selected Odd-Numbered Problems.

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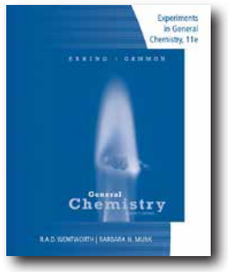

Each experiment in this manual was selected to match topics in your textbook and includes an introduction, a procedure, a page of pre-lab exercises about the concepts the lab illustrates, and a report form. Some have a scenario that places the experiment in a real-world context. For this edition, minor updates have been made to the lab manual to address some safety concerns.

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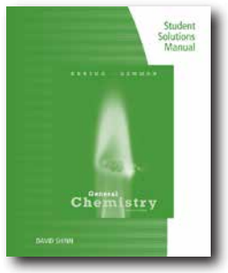

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Steven S. Zumdahl, University of Illinois, Urbana-Champaign; Donald J. DeCoste, University of Illinois, Urbana-Champaign

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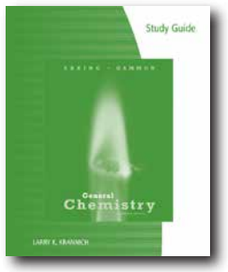

The perfect way to prepare for exams, build problem-solving skills, and get the grade you want! This guide reinforces your understanding of major concepts, learning objectives, and key terms presented in your text, and further develops your problem–solving skills. Each chapter features both a diagnostic pre-test and post-test, additional practice problems and their worked-out solutions, and cumulative unit exams.

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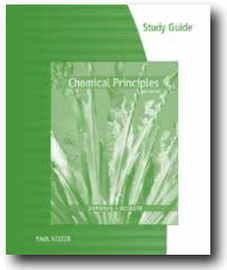

The perfect way to prepare for exams, build problem-solving skills, and get the grade you want! This comprehensive self-study aid contains alternative strategies for solving problems, supplemental explanations for the most difficult material, and self-tests. Approximately 400 worked examples and 1,200 practice problems (with answers) are included to help you master the concepts covered in the text.

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How to Get an A

Charles H. Atwood, University of Georgia

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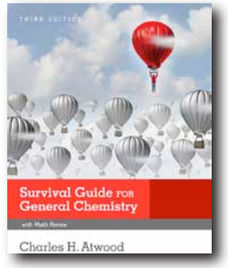

This survival guide is designed to help you solve problems you are likely to encounter in your General Chemistry course. Understand the thought process needed to tackle some of these problems by dissecting them into manageable chunks. Build the confidence you need to master your course with three levels of proficiency questions: A, B, and minimal. Available for packaging with any CENGAGE textbook or available separately for a minimal cost at CENGAGEbrain.com.

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CHEMISTRY, 8E

Principles and Reactions (with LMS Intg OWLv2, 4-terms (24 months) Printed Access Card

William L. Masterton, University of Connecticut, Emeritus;
Cecile N. Hurley, University of Connecticut

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Master the fundamental topics of general chemistry and succeed in the course with this brief, student-friendly text. CHEMISTRY: PRINCIPLES AND REACTIONS, 8e, provides a clear, concise presentation based on the authors' extensive teaching experience, includes an increased variety and number of applications that highlight some of the most up-to-date uses of chemistry, as well as graded and concept-driven examples and examples that focus on molecular reasoning and understanding. The strong art program now includes "talking labels" that help you visualize chemical concepts, while integrated end-of-chapter questions and Key Concepts correlate to OWLv2, the #1 online homework and tutorial system for chemistry that has already helped hundreds of thousands of students earn a better grade.

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CHEMISTRY, 8E

Principles and Reactions, Hybrid Edition (with OWLv2, 4 terms (24 months) Printed Access Card)

William L. Masterton, University of Connecticut, Emeritus;
Cecile N. Hurley, University of Connecticut

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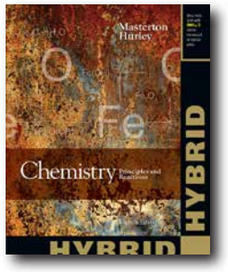

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CHEMISTRY, 8E

Principles and Reactions

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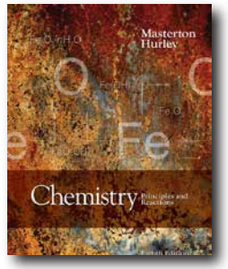

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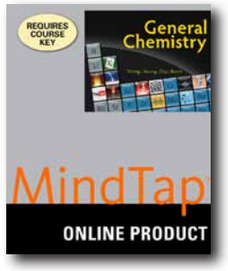

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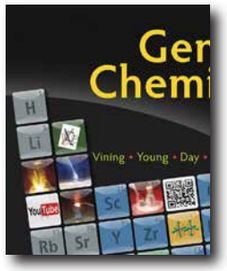

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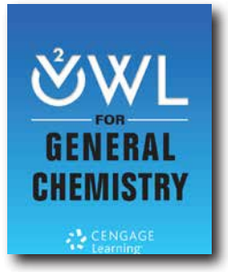

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PRINCIPLES OF MODERN CHEMISTRY, 8E

David W. Oxtoby, Pomona College; H. Pat Gillis, University of California - Los Angeles; Laurie J. Butler, The University of Chicago

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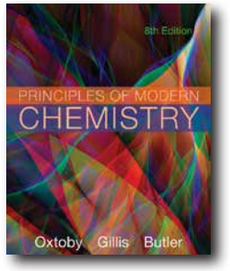

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David W. Oxtoby, Pomona College; H. Pat Gillis, University of California - Los Angeles; Laurie J. Butler, The University of Chicago

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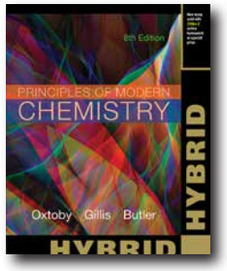

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STUDENT SOLUTIONS MANUAL FOR MASTERTON/HURLEY'S CHEMISTRY: PRINCIPLES AND REACTIONS, 8TH, 8E

William L. Masterton, University of Connecticut, Emeritus; Cecile N. Hurley, University of Connecticut

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ebook

Improve your performance at exam time with this manual's complete solutions to the even-numbered end-of-chapter Questions and Problems answered in Appendix 5, including the Challenge Problems. The authors include references to textbook sections and tables to help guide you through the problem-solving techniques employed by the authors.

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David W. Oxtoby, Pomona College; H. Pat Gillis, University of California - Los Angeles; Laurie J. Butler, The University of Chicago

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Prepare for exams and succeed in your chemistry course with this comprehensive solutions manual! Featuring worked-out solutions to every odd-numbered problem in PRINCIPLES OF MODERN CHEMISTRY, 8th Edition, this manual shows you how to approach and solve problems using the same step-by-step explanations found in your textbook examples.

STUDY GUIDE AND WORKBOOK FOR MASTERTON/HURLEY'S CHEMISTRY: PRINCIPLES AND REACTIONS, 8TH, 8E

William L. Masterton, University of Connecticut, Emeritus; Cecile N. Hurley, University of Connecticut

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Improve your success in the course with this helpful Study Guide and Workbook. This valuable resource contains additional worked examples and problem-solving techniques to help you understand the principles of general chemistry. Each chapter is outlined with fill-in-the-blank activities, exercises, and self-tests.

CHEMISTRY, 5E

The Molecular Science

John W. Moore, University of Wisconsin, Madison; Conrad L. Stanitski, Franklin and Marshall College

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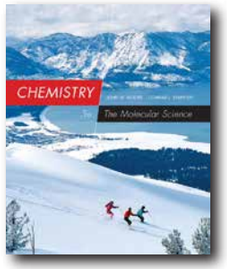

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EXPERIMENTS IN GENERAL CHEMISTRY, 6E

Steven L. Murov, Modesto Junior College

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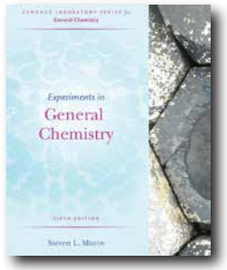

EXPERIMENTS IN GENERAL CHEMISTRY is the perfect textbook to prepared you for success in a chemistry class. This innovative book is not only full of exciting experiments but will help you understand the chemistry behind what is happening. With this guide in your pocket, acing any chemistry class will be a breeze!

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STUDENT SOLUTIONS MANUAL FOR MOORE/STANITSKI'S CHEMISTRY: THE MOLECULAR SCIENCE, 5TH, 5E

Judy Ozment, Pennsylvania State University

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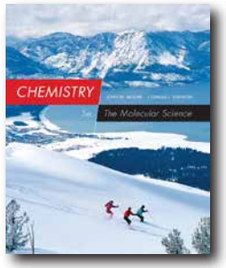

Go beyond the answers to truly understanding the steps it takes to get there! This solutions manual contains fully worked-out solutions to end-of chapter questions that have blue, boldface numbers and are answered in the back of the text. Solutions match the problem-solving strategies used in the main text.

STUDENT SOLUTIONS MANUAL WITH STUDY GUIDE FOR BROWN/HOLME'S CHEMISTRY FOR ENGINEERING STUDENTS, 3RD, 3E

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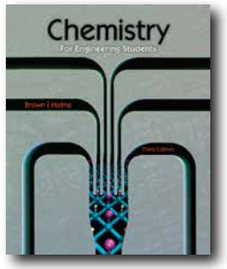

Using this STUDENT SOLUTIONS MANUAL AND STUDY GUIDE, you can study more effectively and improve your performance at exam time! This comprehensive guide walks you through the step-by-step solutions to the odd-numbered end-of-chapter problems in the text. Because the best way for you to learn and understand the concepts is to work multiple, relevant problems on a daily basis and to have reinforcement of important topics and concepts from the book, the STUDENT SOLUTIONS MANUAL gives you instant feedback by providing you with not only the answers, but also detailed explanations of each problem's solution. Also included are Study Goals and Chapter Objective quizzes for each chapter of the text.

STUDY GUIDE FOR MOORE/ STANITSKI'S CHEMISTRY: THE MOLECULAR SCIENCE, 5TH, 5E

Michael Sanger, Middle Tennessee State University

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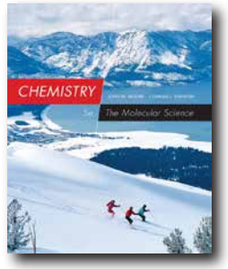

Study more effectively and improve your performance at exam time with this guide! The Study Guide for CHEMISTRY: THE MOLECULAR SCIENCE, FOURTH EDITION contains helpful learning tools, such as brief notes on chapter sections with examples, review of key terms, and practice tests (with answers).

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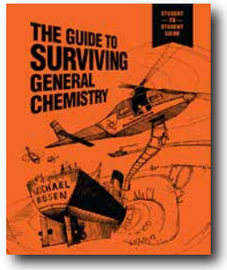

Being a student himself, Michael Rosen knows exactly how it feels when trying to learn difficult concepts. He has extensive experience tutoring General Chemistry and understands where students need help the most. GUIDE TO SURVIVING GENERAL CHEMISTRY is a straight-to-the-point resource that gives you exactly what you need to know, along with the best techniques for learning general chemistry. Endorsed by Professor Mark Oram, Ph.D for accuracy and topic coverage, this text is filled with study tips, example problems, and worked out solutions for all topics in the course This book is the ideal guide for mastering General Chemistry. Available packaged with any CENGAGE textbook or available separately for a minimal cost at CENGAGEbrain.com.

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1. Acids and Bases. 2. Colligative Properties. 3. Concentration Unites and Conversions for Solutions. 4. Dimensional Analysis and Significant Figures. 5. Electrochemistry and Redox. 6. Electrons. 7. Equilibrium Calculations. 8. Gas Laws. 9. Kinetics. 10. Lewis Structures and VSEPR Theory. 11. Nomenclature. 12. Organic chemistry. 13. Periodic Table. 14. Phase Diagrams and Crystalline Solids. 15. Quantitative Calculations. 16. Solubility and Net Ionic Equations. 17. Statistics. 18. Thermodynamics.

CHEMISTRY, 10E

Kenneth W. Whitten, University of Georgia; Raymond E. Davis, University of Texas, Austin; Larry Peck, Texas A&M University; George G. Stanley, Louisiana State University

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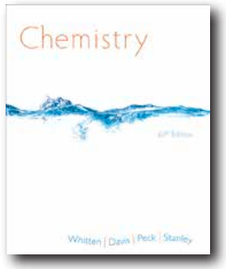

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CHEMISTRY, HYBRID (WITH LMS INTG OWLV2, 4 TERMS (24 MONTHS) PRINTED ACCESS CARD), 9E

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Appendix 2. The Quantitative Kinetic Molecular Model. Appendix 3. Spectral Analysis. Appendix 4. Selected Thermodynamic Data. Appendix 5. Equilibrium Constants and Reduction Potentials. A5.1 Values of Ka for Some Common Monoprotic Acids. A5.2 Stepwise Dissociation Constants for Several Common Polyprotic Acids. A5.3 Values of Kb for Some Common Weak Bases. A5.4 Ksp Values at 25_C for Common Ionic Solids. A5.5 Standard Reduction Potentials at 25_C (298K) for Many Common Half-Reactions. Appendix 6. SI Units and Conversion Factors. Glossary. Answers to Selected Exercises.

PRINCIPLES OF CHEMISTRY, 7E

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STUDENT SOLUTIONS MANUAL FOR WHITTEN/DAVIS/PECK/STANLEY'S CHEMISTRY, 10TH, 10E

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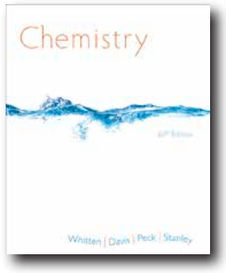

Master problem-solving using the detailed solutions in this manual, which contains answers and solutions to all even-numbered end-of-chapter exercises. Solutions are divided by section for easy reference. With this guide, the author helps you achieve a deeper, intuitive understanding of the material through constant reinforcement and practice. An online version is also available through OWL.

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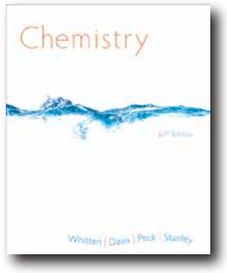

Study more effectively and improve your performance at exam time with this comprehensive guide. The guide includes chapter summaries that highlight the main themes; study goals with section references; lists of important terms; a preliminary test for each chapter that provides an average of 80 drill and concept questions; and answers to the preliminary tests. The Study Guide helps you organize the material and practice applying the concepts of the core text.

GUIDED EXPLORATIONS IN GENERAL CHEMISTRY, 2E

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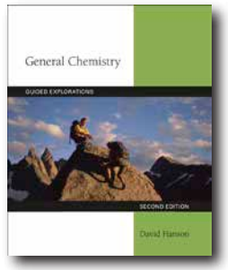

Packed with activities that support Process Oriented Guided Inquiry Learning (POGIL), this hands-on book is an excellent accompaniment to CHEMISTRY: THE MOLECULAR SCIENCE.

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CHEMISTRY, 3E

Principles and Practice

Daniel L. Reger, University of South Carolina; Scott R. Goode, University of South Carolina; David W. Ball, Cleveland State University

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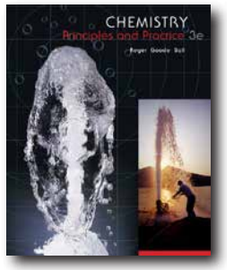

A text that truly embodies its name, CHEMISTRY: PRINCIPLES AND PRACTICE connects the chemistry you learn in the classroom (principles) with real-world uses of chemistry (practice). The authors accomplish this by starting each chapter with an application drawn from a chemical field of interest and revisiting that application throughout the chapter. The Case Studies, Practice of Chemistry essays, and Ethics in Chemistry questions reinforce the connection of chemistry topics to areas such as forensics, organic chemistry, biochemistry, and industry.

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LABORATORY INQUIRY IN CHEMISTRY, 3E

Richard Bauer, Arizona State University; James Birk, Arizona State University; Doug Sawyer, Scottsdale Community College

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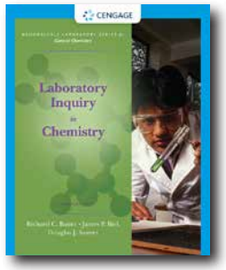

LABORATORY INQUIRY IN CHEMISTRY teaches you the skills you need to easily complete your laboratory investigations. Each investigation begins with a scenario that puts a real-life spin on the problem at hand, provides you with a sense of why the project is relevant, and creates a scenario that is comparable to what chemists face in the real world. Completing experiments is easy with a list of goals, materials, reagents, guidelines, and hints found at the beginning of each investigation.

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The Investigations. 1. What Are the Safety Concerns in the Laboratory? 2. Whats in the Flask? 3. How Should Data Trends Be Presented? 4. How Is Lab Equipment Used? 5. What Relationships Exist Among Elements? 6. What's in the Bottles? 7. How Can the Waste Be Made Useful? 8. Is the Water Hard or Soft? 9. How Hot Is the Water? 10. Which Metal Will Burn the Skin? 11. How Much Acetic Acid Is in Vinegar? 12. Are All Neutralization Reactions the Same? 13. How Many Waters of Hydration Are in the Formula? 14. How Much Sodium Bicarbonate Is in the Mixture? 15. Is It Economical to Recycle Aluminum? 16. What Is a Copper Cycle? 17. Who Wrote the Ransom Note? 18. How Can UV Sensitive Beads Be Used to Test Sunscreens? 19. What Factors Affect the Intensity of Color? 20. How Much Cobalt Is in the Soil? 21. How Much Copper Is in the Coin? 22. Which Iron Compound Is It? 23. Should We Mine This Ore? 24. Why Do Liquids Evaporate at Different Rates? 25. What Are the Structures of Some Alloys? 26. How Is LED Light Color Related to Composition? 27. What Is the Molar Mass of Mars Ice Gas? 28. How Much Gas Is Produced? 29. Which Alcohols Are in the Barrels? 30. How Is Heat of Combustion Measured Indirectly? 31. What Is the Rate Law? 32. How Fast Does the Crystal Violet Decolorize? 33. Why Is the Vinegar Factory Rusting? 34. What Factors Affect the Solubility of Kidney Stones? 35. How Many Chemicals Are in the Vial? 36. What Factors Affect Chemical Equilibrium? 37. What Is the Formation Constant? 38. Are Household Items Acidic, Basic, or Neutral? 39. What Is the pH of Soil? 40. What Is the Acid Dissociation Constant? 41. What Is the Solubility Product? 42. What Are Some Chemical Properties of Cream of Tartar? 43. What Are the Metals? 44. How Can a Battery Be Made from Coins? 45. What Is the Complex Ion? 46. What Formulation Makes the Best Toy? 47. How Are Anions Identified? 48. How Are Cations Identified? 49. How Are More Cations Identified? 50. How Are Ionic Solids Identified? Appendix A: Automated Data Collection. Appendix B: Transmittance and Absorbance Data Collection. Appendix C: Measuring pH. Appendix D: Temperature Data Collection. Appendix E: Pressure Data Collection. Appendix F: Voltage Data Collection. Appendix G: Selected Laboratory Techniques. Appendix H: Laboratory Equipment. Appendix I: Sample Material Safety Data Sheet. Appendix J: Tables

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INORGANIC CHEMISTRY

DESCRIPTIVE INORGANIC, COORDINATION, AND SOLID STATE CHEMISTRY, 3E

Glen E. Rodgers, Allegheny College

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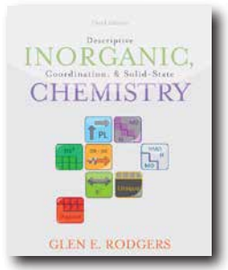

Succeed in the course with this easy-to-understand text. The book introduces the basics of coordination, solid state, and descriptive main-group chemistry in a uniquely accessible manner, featuring a "less is more" approach. Rather than reviewing material already covered in your introductory course, the book moves directly into topics central to inorganic chemistry. Written in a conversational style that is enjoyable and easy to understand, this book presents not only the basic theories and methods of inorganic chemistry (in three self-standing sections), but also a great deal of the history and applications of the discipline. To better help you understand how seemingly disparate topics connect, full color coverage of the "Network of Interconnected Ideas for Understanding the Periodic Table" appears on the endpapers. In addition, the book includes a new pull-out card of the complete network for easy reference.

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1. The Evolving Realm of Inorganic Chemistry. PART 1: COORDINATION CHEMISTRY. 2. An Introduction to Coordination Chemistry. 3. Structures of Coordination Compounds. 4. Bonding Theories for Coordination Compounds. 5. Rates and Mechanisms of Reactions of Coordination Compounds. 6. Applications of Coordination Compounds. PART 2: SOLID-STATE CHEMISTRY. 7. Solid-State Structures. 8. Solid-State Energetics. PART 3: DESCRIPTIVE CHEMISTRY OF THE

REPRESENTATIVE ELEMENTS. 9. Building a Network of Ideas to Make Sense of the Periodic Table. 10. Hydrogen and Hydrides. 11. Oxygen, Aqueous Solutions, and the Acid-Base Character of Oxides and Hydroxides. 12. Group 1A: The Alkali Metals. 13. Group 2A: The Alkaline-Earth Metals. 14. The Group 3A Elements. 15. The Group 4A Elements. 16. Group 5A: The Pnicogens. 17. Sulfur, Selenium, Tellurium, and Polonium. 18. Group 7A: The Halogens. 19. Group 8A: The Noble Gases.

INSTRUMENTAL ANALYSIS

AE PRINCIPLES OF INSTRUMENTAL ANALYSIS, 7E

Douglas A. Skoog, Stanford University; F. James Holler, University of Kentucky; Stanley R. Crouch, Michigan State University

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PRINCIPLES OF INSTRUMENTAL ANALYSIS is the standard for courses on the principles and applications of modern analytical instruments. In the 7th edition, authors Skoog, Holler, and Crouch infuse their popular text with updated techniques and new Instrumental Analysis in Action case studies. Updated material enhances the book's proven approach, which places an emphasis on the fundamental principles of operation for each type of instrument, its optimal area of application, its sensitivity, its precision, and its limitations. The text also introduces students to elementary analog and digital electronics, computers, and the treatment of analytical data. A companion website is available, providing students with tutorials on instrumental methods, Excel files of data analysis, and simulations of analytical techniques to help them visualize important concepts. Digital Object Identifiers (DOIs) are provided for most references to the primary literature.

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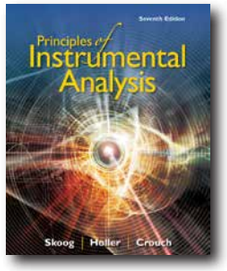

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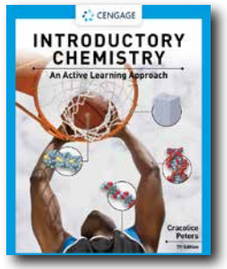

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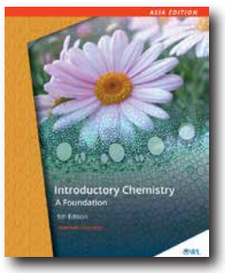

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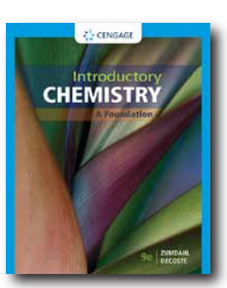

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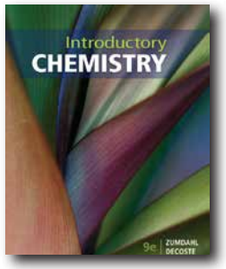

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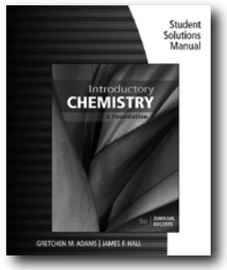

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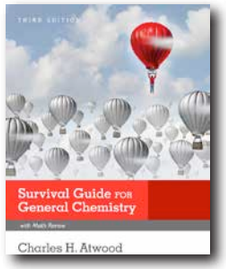

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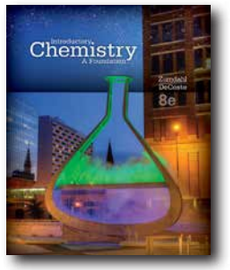

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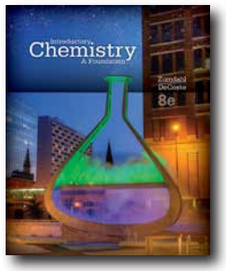

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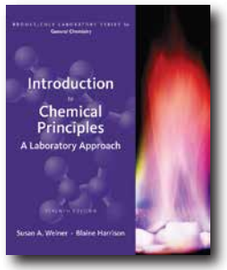

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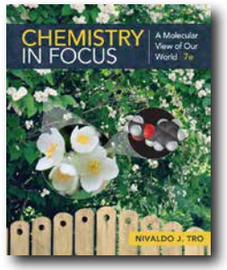

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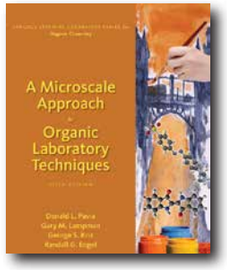

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William H. Brown, Beloit College; Brent L. Iverson, University of Texas, Austin; Eric Anslyn, University of Texas, Austin; Christopher S. Foote, University of California, Los Angeles

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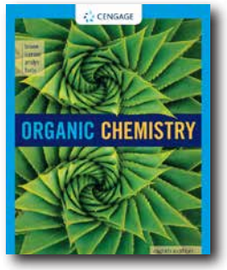

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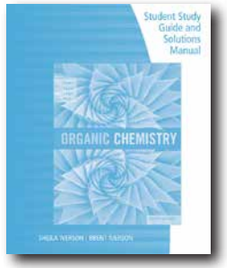

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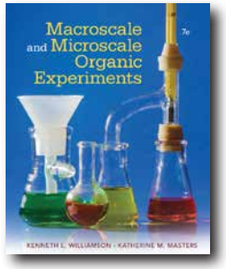

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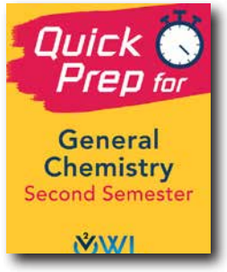

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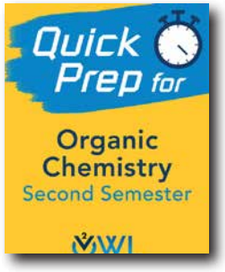

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Donald L. Pavia, Western Washington University; George S. Kriz, Western Washington University; Gary M. Lampman, Western Washington University; Randall G. Engel, North Seattle Community College

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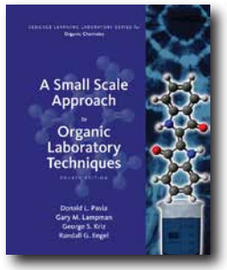

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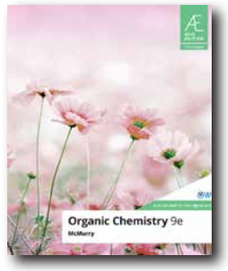

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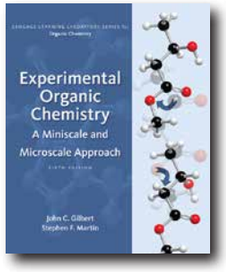

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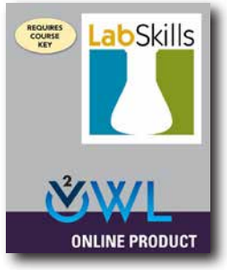

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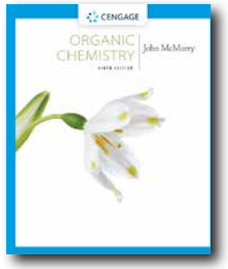

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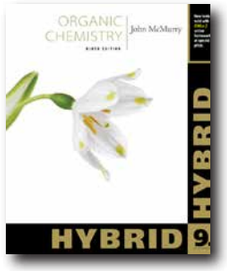

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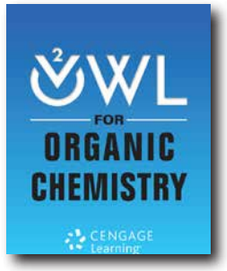

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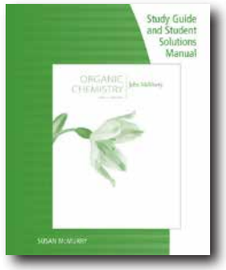

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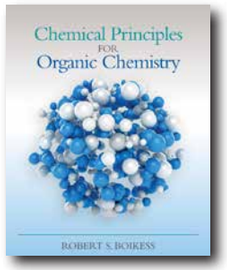

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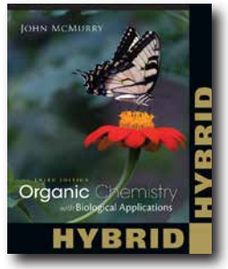

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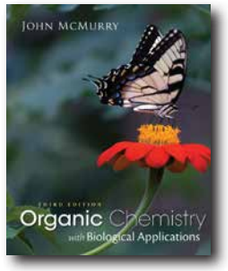

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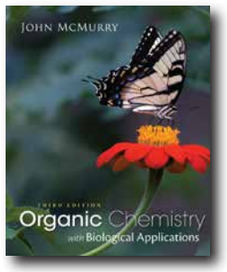

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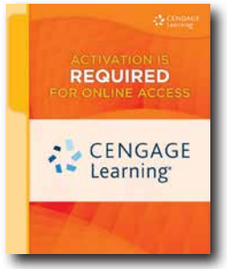

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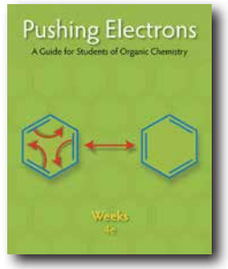

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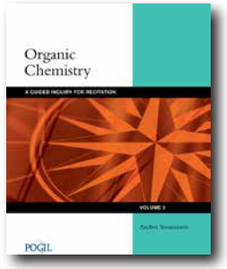

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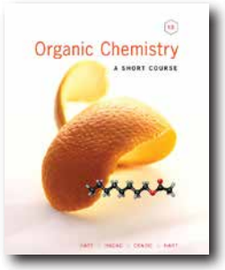

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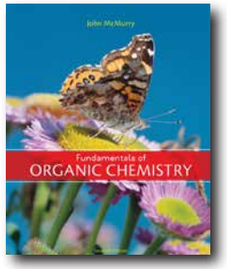

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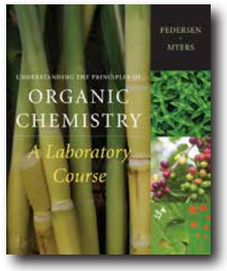

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Designed for use as a supplement to a traditional text to encourage active and collaborative learning in the classroom, this activity book incorporates new methods for teaching chemistry that reflect current research on how students learn. The purpose of the guided inquiry approach is to teach you to think analytically and collaboratively in teams, like scientists do, rather than teaching you to memorize important conclusions arrived at by great scientists of the past. By looking carefully at new problems, constructing logical conclusions based on observations, and discussing the merits of your conclusions with peers, you'll develop a stronger conceptual understanding of and appreciation for the material. Honing your logical and empirical skills enables you to better pursue not only chemistry, but any other complex sets of ideas.

CONTENTS

Intro Organic Chemistry: a Guided Inquiry. 1. Bond Angles and Shape. 2. Lewis Structures. 3. Electron Orbitals. 4. Polar Bonds, Polar Reactions. 5. Resonance. 6. Alkanes & Alkenes. 7. Cycloalkanes. 8. Addition via Carbocation. 9. Addition via Cyclic Intermediate. 10. Oxidation and Reduction. 11. Addition to Alkynes. 12. Chirality. 13. Substitution. 14. Elimination. 15. Radical Reactions. 16. Synthesis Workshop 1. 17. Conjugation and Molecular Orbital (MO) Theory. 18. Aromaticity. 19. EAS: Electrophilic Aromatic Substitution. 20. Acidity and pKa of Phenols. 21. NAS: Nucleophilic Aromatic Substitution. 22. Synthesis Workshop 2. 23. Addition to a Carbonyl. 24. Carboxylic Acids & Derivatives. 25. Enolate & Enol Nucleophiles. 26. Aldol and Claisen Reactions. 27. Amines. Summary of Synthetic Transformations. Index. Table of pKa Values by Structure.

STUDENT SOLUTIONS MANUAL FOR STRAUMANIS' ORGANIC CHEMISTRY: A GUIDED INQUIRY, 2ND, 2E

Andrei Straumanis, College of Charleston

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PHYSICAL CHEMISTRY

PHYSICAL CHEMISTRY, 2E

David W. Ball, Cleveland State University

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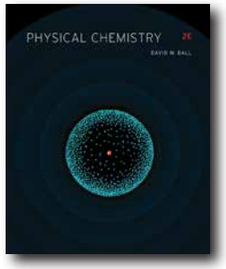

Learn physical chemistry in a functional and relevant way with the proven, easy-to-read approach of PHYSICAL CHEMISTRY, 2e. Focusing on core topics, the Second Edition follows a traditional organization and now features an increased focus on thermochemistry, as well as new problems, new two-column examples, and a dynamic new four-color design. To help you succeed, the text also includes a review of calculus applications as applied to physical chemistry.

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STUDENT SOLUTIONS MANUAL FOR BALL'S PHYSICAL CHEMISTRY, 2ND, 2E

David W. Ball, Cleveland State University

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Master problem-solving using the detailed solutions in this manual, which contains completely worked-out solutions to all odd end-of-chapter exercises and problems.

SPECTROSCOPY

INTRODUCTION TO SPECTROSCOPY, 5E

Donald L. Pavia, Western Washington University; Gary M. Lampman, Western Washington University; George S. Kriz, Western Washington University; James A. Vyvyan, Western Washington University

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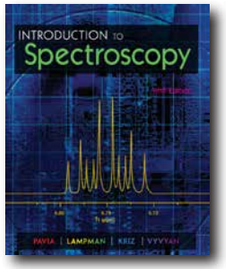

Whether you're an introductory student or need a reliable spectroscopy reference, INTRODUCTION TO SPECTROSCOPY, 5e, will exceed your expectations. This comprehensive resource helps you develop an understanding of the latest advances in spectroscopy through a systematic introduction to spectra and basic theoretical concepts in spectroscopic methods. The book includes up-to-date spectra; a modern presentation of one-dimensional nuclear magnetic resonance (NMR) spectroscopy; an introduction to biological molecules in mass spectrometry; and coverage of modern techniques alongside DEPT, COSY, and HECTOR.

CONTENTS

1. Molecular Formulas and What Can Be Learned from Them. 2. Infrared Spectroscopy. 3. Nuclear Magnetic Resonance Spectroscopy Part One: Basic Concepts. 4. Nuclear Magnetic Resonance Spectroscopy Part Two: Carbon-13 Spectra, Including Heteronuclear Coupling with Other Nuclei. 5. Nuclear Magnetic Resonance Spectroscopy Part Three: Spin-Spin Coupling. 6. Nuclear Magnetic Resonance Spectroscopy Part Four: Other Topics in One-Dimensional NMR. 7. Ultraviolet Spectroscopy. 8. Mass Spectrometry. 9. Combined Structure Problems. 10. Nuclear Magnetic Resonance Spectroscopy Part Five: Advanced NMR Techniques. Answers to Selected Problems. Appendix 1: Infrared

Absorption Frequencies of Functional Groups. Appendix 2: Some Representative Chemical Shift Values for Various Types of Protons. Appendix 3: Typical Proton Coupling Constants. Appendix 4: Calculation of Proton (1H) Chemical Shifts. Appendix 5: Calculation of Carbon-13 Chemical Shifts. Appendix 6: 13C Coupling Constants. Appendix 7: Tables of Precise Masses and Isotopic Abundance Ratios for Molecular Ions Under Mass 100 Containing Carbon, Hydrogen, Nitrogen, and Oxygen. Appendix 8: Common Fragment Ions Under Mass 105. Appendix 9: Handy-Dandy Guide to Mass Spectral Fragmentation Patterns. Appendix 10: Index of Spectra.

EARTH SCIENCES

ENVIRONMENTAL SCIENCE

SUSTAINING THE EARTH, 11E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

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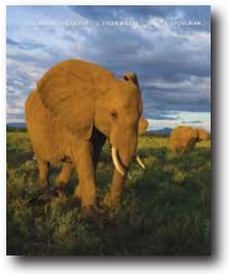

SUSTAINING THE EARTH provides the basic scientific tools for understanding and thinking critically about the environmental problems we face. About half the price of other environmental science texts, this 14-chapter, one-color core book offers an integrated approach that emphasizes how environmental and resource problems and solutions are related. The new edition of SUSTAINING THE EARTH is fully updated with the latest statistics and reports of important scientific studies. New Connections boxes show surprising but important connections between environmental problems and aspects of daily life. In addition, new Thinking About boxes help students apply the concepts of the book to their own lives. Sustainability is the integrating theme of this current and thought-provoking book. The concept-centered approach transforms complex environmental topics and issues into key concepts that students will understand and remember. By framing the concepts with goals for more sustainable lifestyles and human communities, you will see how promising the future can be.

CONTENTS

Introduction: Learning Skills. PART I: HUMANS AND SUSTAINABILITY: AN OVERVIEW. 1. Environmental Problems, Their Causes, and Sustainability. PART II: SCIENCE, ECOLOGICAL PRINCIPLES, AND SUSTAINABILITY. 2. Science, Matter, Energy, and Ecosystems. 3. Biodiversity and Evolution. 4. Community Ecology, Population Ecology, and the Human Population. PART III: SUSTAINING BIODIVERSITY. 5. Sustaining Biodiversity: The Species Approach. 6. Sustaining Biodiversity: The Ecosystem Approach. PART IV: SUSTAINING NATURAL RESOURCES. 7. Food Production and the Environment. 8. Water Resources and Water Pollution. 9. Nonrenewable Energy Resources. 10. Energy Efficiency and Renewable Energy. PART V: SUSTAINING ENVIRONMENTAL QUALITY. 11. Environmental Hazards and Human Health. 12. Air Pollution, Climate Change, and Ozone Depletion. 13. Urbanization and Solid and Hazardous Waste. PART VI: SUSTAINING HUMAN SOCIETIES. 14. Economics, Politics, Worldviews, and the Environment. Appendix: Units of Measurement.

NATIONAL GEOGRAPHIC LEARNING READER: GREEN (WITH PRINTED ACCESS CARD)

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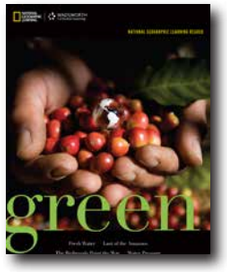

Bring your learning to life with compelling images, media and text from National Geographic. GREEN will help you develop a clearer understanding of the world around you through engaging content. This reader's themes are inspired by our changing relationship with the earth, based on an understanding that the planet's resources are finite and that our future depends on preserving them. While the term "green" signifies a level of awareness about environmental concerns, it is used here in the broadest sense, to draw your attention to the state of the planet and to promote discourse on how to address the needs of the human population as well as the ecosystems that sustain life in our world. To what extent we see ourselves as members of a global community and to rethink how we will meet the growing needs of our population in the future are the two central questions this collection asks you to consider critically.

CONTENTS

"Each reading is accompanied by Summary Headnotes, Focus Questions, Discussion Questions, Writing Activities, and Collaborative Activities." About the Series. Preface. Fresh Water. Last of the Amazon. The Redwoods Point the Way. Water Pressure. The Drying of the West. The Big Melt. The End of Plenty. Still Waters: The Global Fish Crisis. The Gulf of Oil: The Deep Dilemma. The 21st-Century Grid. Saving Energy: It Starts at Home. High-Tech Trash.

NATIONAL GEOGRAPHIC LEARNING READER: WATER

Global Challenges and Policy of Freshwater Use (with eBook, 1 term (6 months) Printed Access Card)

National Geographic Learning

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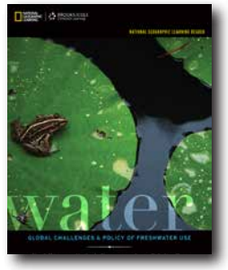

Bring your learning to life with compelling images, media and text from National Geographic. Global Challenges and Policy of Freshwater Use will help you develop a clearer understanding of the world around you through engaging content. Organized into three units – historical context, current challenges, and potential solutions – Global Challenges and Policy of Freshwater Use introduces students to many of the real world challenges that both individuals and governments face in deciding how we should manage global freshwater resources. The selected articles pull from current events throughout the world to illustrate a variety of freshwater policy problems, including examples of the effects of changing climates on precipitation patterns, how growing populations and competing industry interests are having to adapt in a world with these changing patterns, and the controversy over what inherent and legal rights nature and wildlife should have in our water policy decisions. Selected readings also confront issues associated with the consequences of large-scale water pollution and aquifer depletion, restoration potentials and dam removal, freshwater production and distribution technologies, and international relations that are significantly influenced by water usage and rights. Collectively, these articles create a reader that is designed to help students from a wide variety of disciplines get a more thorough appreciation for the challenges involved in global freshwater policy.

CONTENTS

About National Geographic Learning. Preface. Water is Life. Outlook Extreme: Changing Rains. Australia's Dry Run. Bitter Waters. Parting the Waters. Reuniting a River. Drying of the West.

GEOGRAPHY

NEW EDITION

PHYSICAL GEOGRAPHY, 12E

James F. Petersen, Emeritus, Texas State University; Dorothy Sack, Ohio University; Robert E. Gabler, Western Illinois University

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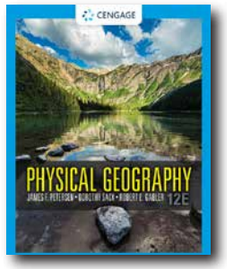

Take a unique look at the Earth as you examine its natural processes, complex systems and the reciprocal relationship between people and Earth's natural environment. Written by three of today's most respected geographers, Petersen/Sack/Gabler's PHYSICAL GEOGRAPHY, 12E introduces geography from three perspectives: as a physical science, a spatial science and an environmental science. A reader-friendly presentation demonstrates the processes and interactions among Earth's systems and emphasizes environmental sustainability -- highlighting how natural systems are affected by human activities and how natural processes impact human lives. Updated, compelling visuals illustrate concepts with vivid photos, helpful figures and information-rich maps. This edition also explores dynamic areas of the Earth, such as the Pacific Ring of Fire, and examines the latest digital and drone technologies used in geographical research. MindTap digital tools and videos are available to assist in review.

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FUNDAMENTALS OF WORLD REGIONAL GEOGRAPHY, 4E

Joseph J. Hobbs, University of Missouri, Columbia

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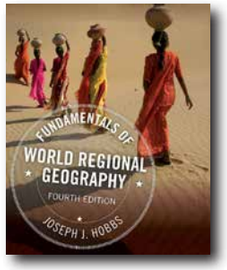

Cengage Learning's FUNDAMENTALS OF WORLD REGIONAL GEOGRAPHY brings course concepts to life with interactive learning, study, and exam preparation tools along with comprehensive text content for one semester/quarter courses. Whether you use a traditional printed text or all digital MindTap alternative, it's never been easier to better understand the eight world regions, including the historical, cultural, economic, political, and physical aspects that create regional unity, give them personality, and make them newsworthy.

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1. Objectives and Tools of World Regional Geography. 2. Physical Processes and World Regions. 3. Human Processes and World Regions. 4. Europe. 5. Russia and the Near Abroad. 6. The Middle East and North Africa. 7. South and East Asia. 8. Oceania. 9. Sub-Saharan Africa. 10. Latin America. 11. The United States and Canada.

PHYSICAL GEOGRAPHY, 11E

James F. Petersen, Emeritus, Texas State University; Dorothy Sack, Ohio University; Robert E. Gabler, Western Illinois University

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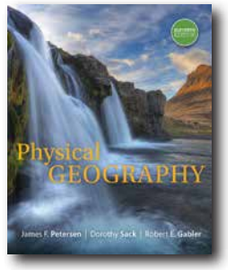

PHYSICAL GEOGRAPHY, Eleventh Edition, uses the combined expertise of three accomplished and respected geographers to show not only what constitutes physical geography but also the interrelationships between people and Earth's natural environment. The well-written text and excellent illustrations emphasize three essential themes to demonstrate the major roles of the discipline -- Geography as Physical Science, Geography as Spatial Science, and Geography as Environmental Science. With a strong focus on processes and the interrelationships among Earth's systems, this text guides you to an understanding and appreciation of how the various natural systems function and of how humans are an integral component of physical geography. Historically, this was the first Physical Geography textbook to take an environmental sustainability approach, and the authors continue to address the theme of human interactions with the environment.

CONTENTS

1. Physical Geography: Earth Environments and Systems. 2. Representations of Earth. 3. Earth-Sun Relationships and Solar Energy. 4. The Atmosphere, Temperature, and the Heat Budget. 5. Atmospheric Pressure, Winds, and Circulation Patterns. 6. Moisture, Condensation, and Precipitation. 7. Air Masses and Weather Systems. 8. Global Climates and Climate Change. 9. Low-Latitude and Arid Climate Regions. 10. Middle-Latitude, Polar, and Highland Climatic Regions. 11. Biogeography. 12. Soils and Soil Development. 13. Earth Materials and Plate Tectonics. 14. Tectonism and Volcanism.

15. Weathering and Mass Wasting. 16. Subsurface Water and Karst. 17. Fluvial Processes and Landforms. 18. Arid Region and Eolian Landforms. 19. Glacial Systems and Landforms. 20. Coastal Processes and Landforms. Appendix A: SI Units and Unit Conversions. Appendix B: Topographic Maps. Appendix C: Understanding and Recognizing Some Common Rocks.

FUNDAMENTALS OF PHYSICAL GEOGRAPHY, 2E

James Petersen, Texas State University, San Marcos; Dorothy Sack, Ohio University; Robert E. Gabler, Western Illinois University

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Cengage Learning's FUNDAMENTALS OF PHYSICAL GEOGRAPHY brings course concepts to life with interactive learning, study, and exam preparation tools along with market leading text content for introductory physical geography courses. Whether you use a traditional printed text or all digital FUNDAMENTALS OF PHYSICAL GEOGRAPHY CourseMate alternative, it's never been easier to better understand the relationship between humans and physical geography, and how one impacts the other.

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NATIONAL GEOGRAPHIC LEARNING READER: WATER

Global Challenges and Policy of Freshwater Use (with eBook, 1 term (6 months) Printed Access Card)

National Geographic Learning

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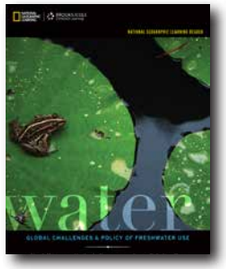

Bring your learning to life with compelling images, media and text from National Geographic. Global Challenges and Policy of Freshwater Use will help you develop a clearer understanding of the world around you through engaging content. Organized into three units – historical context, current challenges, and potential solutions – Global Challenges and Policy of Freshwater Use introduces students to many of the real world challenges that both individuals and governments face in deciding how we should manage global freshwater resources. The selected articles pull from current events throughout the world to illustrate a variety of freshwater policy problems, including examples of the effects of changing climates on precipitation patterns, how growing populations and competing industry interests are having to adapt in a world with these changing patterns, and the controversy over what inherent and legal rights nature and wildlife should have in our water policy decisions. Selected readings also confront issues associated with the consequences of large-scale water pollution and aquifer depletion, restoration potentials and dam removal, freshwater production and distribution technologies, and international relations that are significantly influenced by water usage and rights. Collectively, these articles create a reader that is designed to help students from a wide variety of disciplines get a more thorough appreciation for the challenges involved in global freshwater policy.

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GEOLOGY

NEW EDITION

EARTH SCIENCE, 3E

An Introduction

Mark Hendrix, University of Montana; Graham R. Thompson, University of Montana

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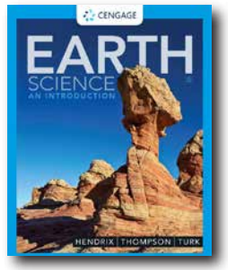

Designed in direct response to student surveys, focus groups and interviews, Hendrix/Thompson's EARTH SCIENCE: AN INTRODUCTION, 3rd Edition, delivers concise yet comprehensive coverage in an engaging and accessible format for majors and non-majors alike. The revised text brings concepts to life with current research and examples, a new-and-improved art program, over 150 new photos, and a clean, modern design. A second-to-none supplements package equips you with a wealth of resources, including MindTap--the digital learning solution that enables you to learn on your own terms.

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1. Earth Systems. Unit I: EARTH MATERIALS AND TIME. 2. Minerals. 3. Rocks. 4. Geologic Time: A Story in the Rocks. 5. Geologic Resources. Unit II: INTERNAL PROCESSES. 6. The Active Earth: Plate Tectonics. 7. Earthquakes and the Earth's Structure. 8. Volcanoes and Plutons. 9. Mountains. Unit III: SURFACE PROCESSES. 10. Weathering, Soil, and Erosion. 11. Fresh Water: Streams, Lakes, Ground Water, and Wetlands. 12. Water Resources. 13. Glaciers and Ice Ages. 14. Deserts and Wind. Unit IV: THE OCEANS. 15. Ocean Basins. 16. Oceans and Coastlines. Unit V: THE ATMOSPHERE. 17. The Atmosphere. 18. Energy Balance in the Atmosphere. 19. Moisture, Clouds, and Weather. 20. Climate. 21. Climate

Change. Unit VI: ASTRONOMY. 22. Motions in the Heavens. 23. Planets and their Moons. 24. Stars, Space, and Galaxies.

NEW EDITION

GEOLOGY, 3E

Earth in Perspective

James S. Monroe, Central Michigan University, Emeritus; Reed Wicander, Central Michigan University, Emeritus

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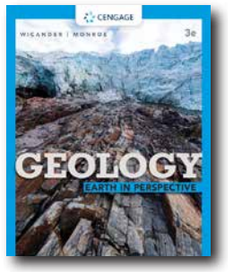

Wicander/Monroe's Geology: Earth in Perspective, 3rd edition, brings geology to life while accommodating your busy lifestyle--and at a value-based price. It provides a complete overview of introductory geology in a succinct, engaging format. Online videos, animations, interactive mapping, and other learning tools further your understanding of physical geology and its relevance to everyday life. The revised text incorporates the latest examples, case studies, and data, including natural disasters, renewable energy, new insight on paleoseismology, sustainability, and updated dating techniques that more accurately identify historic climate change periods. GEO-FOCUS boxes spotlight issues straight from the headlines, and economic and environmental geology topics are integrated throughout.

CONTENTS

HISTORICAL GEOLOGY, 8E

Reed Wicander, Central Michigan University, Emeritus; James S. Monroe, Central Michigan University, Emeritus

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Wicander and Monroe's HISTORICAL GEOLOGY offers comprehensive content for the historical geology course and provides you with an understanding of the principles of historical geology and how these principles are applied in unraveling Earth's history. You will learn and understand the underlying causes of why things happened and the way they did, and how all of Earth's systems and subsystems are interrelated. You will understand the relevancy of Earth's history as part of a dynamic and complex integrated system, not as a series of isolated and unrelated events.

CONTENTS

Platforms, and Cratons. Archean Rocks. Greenstone Belts. Evolution of Greenstone Belts. Archean Plate Tectonics and the Origin of Cratons. The Atmosphere and Hydrosphere. How Did the Atmosphere Form and Evolve? The Hydrosphere—Earth's Surface Waters. Life—Its Origin and Early History. The Origin of Life. Submarine Hydrothermal Vents and the Origin of Life. Earth's Oldest Known Organisms. Archean Mineral Resources. Summary. 9. PRECAMBRIAN EARTH AND LIFE HISTORY: THE PROTEROZOIC EON. Introduction. Proterozoic History of Laurentia. Laurentia During the Paleoproterozoic. Mesoproterozoic Accretion and Igneous Activity. Mesoproterozoic Orogeny and Rifting. Perspective: Black Canyon of the Gunnison National Park, Colorado. Meso- and Neoproterozoic Sedimentation. Proterozoic Supercontinents. Ancient Glaciers and Their Deposits. Paleoproterozoic Glaciers. Glaciers of the Neoproterozoic. The Evolving Atmosphere. Banded Iron Formations (BIFs). Continental Red Beds. Proterozoic Life. 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THE CHANGING EARTH, 7E

Exploring Geology and Evolution

James S. Monroe, Central Michigan University, Emeritus; Reed Wicander, Central Michigan University, Emeritus

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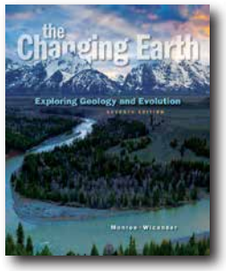

THE CHANGING EARTH: EXPLORING GEOLOGY AND EVOLUTION, is a leader in the Introductory Geology course. Three interrelated themes (plate tectonics, organic evolution, and geologic time) help you understand that Earth is a complex, integrated, and continually changing system. In the new edition authors James S. Monroe and Reed Wicander integrate new content emphasizing the economic impacts of geology. Topics such as fracking, nuclear waste, and the threat of earthquakes are covered in new Geo-Impact boxes that stress real-world applications. Lauded for their clear writing style, the authors go beyond simply explaining geology and its processes; rather, they place that knowledge within the context of human experience by consistently emphasizing relevance, resources, and the environment.

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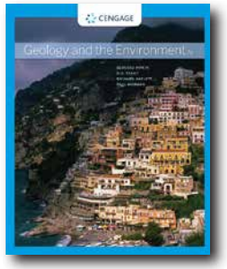

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NATIONAL GEOGRAPHIC LEARNING READER: WATER

Global Challenges and Policy of Freshwater Use (with eBook, 1 term (6 months) Printed Access Card)

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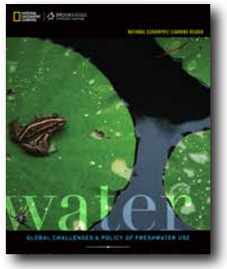

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EARTH LAB, 3E

Exploring the Earth Sciences

Claudia Owen, University of Oregon; Diane Pirie, Florida International University; Grenville Draper, Florida International University

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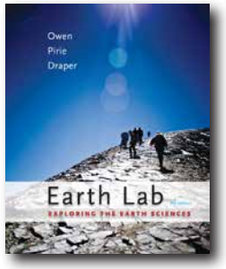

Utilizing graphs and simple calculations, this clearly written lab manual complements the study of earth science or physical geology. Engaging activities are designed to help you develop data-gathering skills (e.g., mineral and rock identification) and data-analysis skills. You'll learn how to understand aerial and satellite images; to perceive the importance of stratigraphic columns, geologic sections, and seismic waves; and more.

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Glaciers and Glaciation. 18. Deserts and Arid Landscapes. APPENDIX. GLOSSARY.

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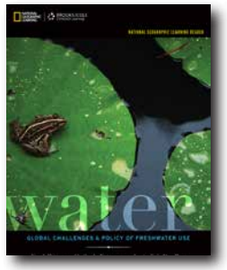

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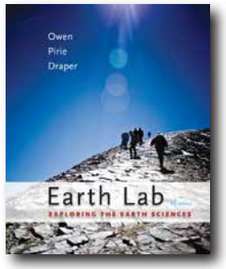

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METEOROLOGY

NEW EDITION

METEOROLOGY TODAY: AN INTRODUCTION TO WEATHER, CLIMATE, AND THE ENVIRONMENT, 13E

C. Donald Ahrens, Modesto Junior College; Robert Henson, Weather Underground

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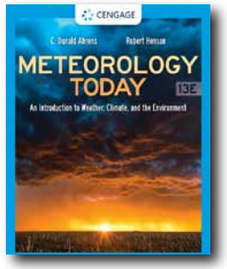

Written by meteorologists C. Donald Ahrens and Robert Henson and grounded in the scientific method, METEOROLOGY TODAY: AN INTRODUCTION TO WEATHER, CLIMATE, AND THE ENVIRONMENT, 13th edition, shows you how to observe, calculate and synthesize weather information as a scientist. Packed with engaging visuals, it provides the latest information on climate change, ozone depletion, air quality, El Niño and other key topics as well as discussions of recent high-profile weather events, including droughts, heat waves, tornado outbreaks and hurricanes. "Focus On" boxes help you delve deeper into meteorological observation methods and environmental issues, while case studies provide direct access to academic and newsworthy papers on recent developments. The MindTap for Meteorology digital platform includes concept check activities, animations and videos, and a variety of hands-on activities.

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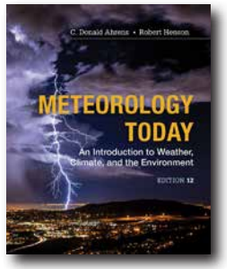

METEOROLOGY TODAY: AN INTRODUCTION TO WEATHER, CLIMATE AND THE ENVIRONMENT by meteorologists C. Donald Ahrens and Robert Henson combines the latest in weather, climate and earth science to introduce students to the concepts and current issues of meteorology. Grounded in the scientific method, the new edition of this highly visual text shows students how to observe, calculate and synthesize information as budding scientists. Specific discussions center on severe weather systems like tornadoes and hurricanes, as well as everyday elements like wind, precipitation and the seasons. The MindTap course provides students with engaging features such as Concept Animations, a digital Study Guide, and summative EOC assessment. New assignable Case Study activities in each chapter allow students to apply their knowledge to real life studies and meteorological events.

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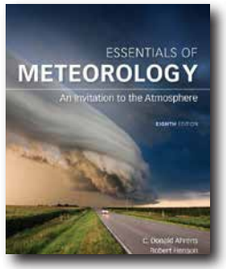

ESSENTIALS OF METEOROLOGY, 8th Edition, is written for students interested in gaining insights into the dynamic workings of the atmosphere. The authors' ability to explain relatively complicated ideas in an easy-to-understand way lets both science and nonscience majors visualize the principles of meteorology. Online animations help you to immediately apply the text material and understand the underlying meteorological principles, and appendices allow you to explore meteorological data such as world temperature extremes and precipitation extremes over a 30-year period.

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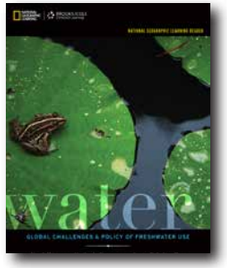

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Donald Hyndman, University of Montana; David Hyndman, Michigan State University

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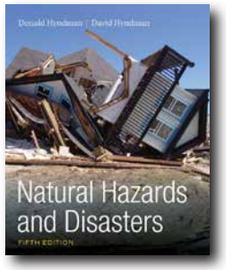

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OCEANOGRAPHY

NEW EDITION

OCEANOGRAPHY, 10E

An Invitation to Marine Science

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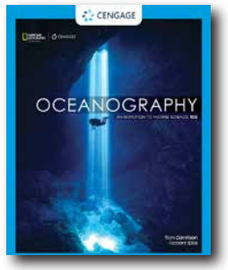

Developed in partnership with the National Geographic Society, OCEANOGRAPHY: AN INVITATION TO MARINE SCIENCE, 10th edition gives you a basic understanding of the complexities and uncertainties involved in ocean use as well as its role in sustaining life on Earth. Thoroughly updated with the latest findings from the field, the text includes new coverage of important issues such as climate change. Emphasizing the science process throughout, it helps you see how concepts from other scientific fields relate to topics in oceanography. Co-author Robert Ellis draws from his experience managing research projects and educational programs throughout the world, and a diverse group of National Geographic Explorers share their unique insights on key concepts. In addition, MindTap equips you with a wealth of anywhere, anytime digital learning solutions.

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ESSENTIALS OF OCEANOGRAPHY, 8E

Tom S. Garrison, Orange Coast College; Robert Ellis, Orange Coast College

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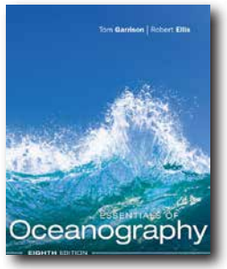

ESSENTIALS OF OCEANOGRAPHY introduces you to the complexities and uncertainties involved in ocean use and the importance of oceans in nurturing and sustaining life. Using exclusive content from the National Geographic Society, this book illustrates the complexity and beauty of the ocean in a way that is both compelling and relatable. With the 8th Edition, bestselling authors Tom Garrison and Robert Ellis illustrate the interdisciplinary nature of marine science and give you the most dynamic and current introduction to oceanography available today.

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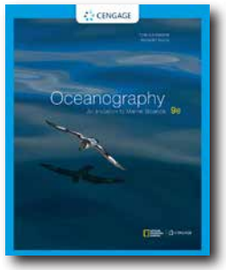


Developed in partnership with the National Geographic Society, market-leading OCEANOGRAPHY: AN INVITATION TO MARINE SCIENCE, 9e gives you a basic understanding of the scientific questions, complexities, and uncertainties involved in ocean use-as well as the role and importance of the ocean in nurturing and sustaining life on Earth. Seasoned researchers and educators, authors Tom Garrison and Robert Ellis emphasize the interdisciplinary nature of marine science, stressing its links to biology, chemistry, geology, physics, meteorology, astronomy, ecology, history, and economics. The text's focus on the science process includes numerous "How Do We Know?" boxes detailing the science behind how oceanographers know what they know. Coverage of climate change has been updated to reflect the latest findings. Chapter 14 "Primary Producers" includes expanded coverage of photosynthetic and chemosynthetic producers to help you understand the "big picture" in marine biology. In addition, new Global GeoScience Watch gives you access to an extensive database of oceanographic articles and other resources that are updated several times a day, while MindTap's all digital, interactive learning platform offers you the ultimate Personal Learning Experience.

CONTENTS

1. The Origin of the Ocean. 2. A History of Marine Science. 3. Earth Structure and Plate Tectonics. 4. Ocean Basins. 5. Ocean Sediments. 6. Water and Ocean Structure. 7. Ocean Chemistry. 8. Circulation of the Atmosphere. 9. Circulation of the Ocean. 10. Waves. 11. Tides. 12. Coasts. 13. Life in the

Ocean. 14. Primary Producers. 15. Marine Animals. 16. Marine Communities. 17. Marine Resources. 18. The Ocean and the Environment. Afterword. Appendix I: Measurements and Conversions. Appendix II: Geologic Time. Appendix III: Latitude and Longitude, Time, and Navigation. Appendix IV: Maps and Charts. Appendix V: The Beaufort Scale. Appendix VI: Taxonomic Classification of Marine Organisms. Appendix VII: Periodic Table of the Elements. Appendix VIII: Working in Marine Science.

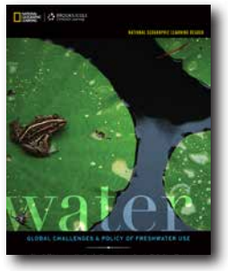
NATIONAL GEOGRAPHIC LEARNING READER: WATER

Global Challenges and Policy of Freshwater Use (with eBook, 1 term (6 months) Printed Access Card)

National Geographic Learning

© 2013, 160pp, Paperback, 9781133603672

ebook



Bring your learning to life with compelling images, media and text from National Geographic. Global Challenges and Policy of Freshwater Use will help you develop a clearer understanding of the world around you through engaging content. Organized into three units – historical context, current challenges, and potential solutions – Global Challenges and Policy of Freshwater Use introduces students to many of the real world challenges that both individuals and governments face in deciding how we should manage global freshwater resources. The selected articles pull from current events throughout the world to illustrate a variety of freshwater policy problems, including examples of the effects of changing climates on precipitation patterns, how growing populations and competing industry interests are having to adapt in a world with these changing patterns, and the controversy over what inherent and legal rights nature and wildlife should have in our water policy decisions. Selected readings also confront issues associated with the consequences of large-scale water pollution and aquifer depletion, restoration potentials and dam removal, freshwater production and distribution technologies, and international relations that are significantly influenced by water usage and rights. Collectively, these articles create a reader that is designed to help students from a wide variety of disciplines get a more thorough appreciation for the challenges involved in global freshwater policy.

CONTENTS

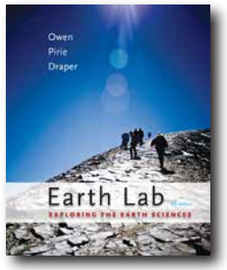
EARTH LAB, 3E

Exploring the Earth Sciences

Claudia Owen, University of Oregon; Diane Pirie, Florida International University; Grenville Draper, Florida International University

© 2011, 480pp, Paperback, 9780538737005

ebook



Utilizing graphs and simple calculations, this clearly written lab manual complements the study of earth science or physical geology. Engaging activities are designed to help you develop data-gathering skills (e.g., mineral and rock identification) and data-analysis skills. You'll learn how to understand aerial and satellite images; to perceive the importance of stratigraphic columns, geologic sections, and seismic waves; and more.

CONTENTS

ENVIRONMENTAL SCIENCE

ENVIRONMENTAL SCIENCE

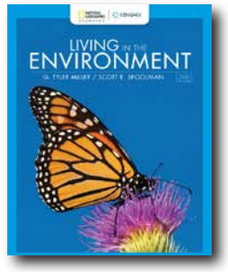
NEW EDITION

LIVING IN THE ENVIRONMENT, 20E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2021, 832pp, Hardback, 9780357142202

CENGAGE | MINDTAP ebook



Packed with captivating illustrations from National Geographic and MindTap's anywhere, anytime digital learning tools, Miller/Spoolman's LIVING IN THE ENVIRONMENT, 20th edition, empowers you with the knowledge and inspiration to make a difference in solving today's environmental issues. Emphasizing sustainability, the authors offer clear introductions to numerous environmental problems and balanced discussions to evaluate potential solutions. Up-to-date coverage includes no-till farming, CRISPR gene editing, phosphate crisis, genetically engineered foods, lithium supplies, recycling threats, economics and climate change, and more. Exercises throughout sharpen your critical-thinking skills, while Core Case Studies help you apply what you've learned. MindTap's exclusive content includes concept animations and conceptual learning activities to help you understand key environmental issues.

CONTENTS

and Evolution. 5. Species Interactions, Ecological Succession, and Population Control. 6. The Human Population. 7. Climate and Terrestrial Biodiversity. 8. Aquatic Biodiversity. PART III: SUSTAINING BIODIVERSITY. 9. Sustaining Biodiversity: Saving Species. 10. Sustaining Terrestrial Biodiversity: Saving Ecosystems and Ecosystem Services. 11. Sustaining Aquatic Biodiversity: Saving Aquatic Systems and Ecosystem Services. PART IV: SUSTAINING NATURAL RESOURCES. 12. Food Production and the Environment. 13. Water Resources. 14. Geology and Mineral Resources. 15. Nonrenewable Energy. 16. Energy Efficiency and Renewable Energy. PART V: SUSTAINING ENVIRONMENTAL QUALITY. 17. Environmental Hazards and Human Health. 18. Air Pollution and Ozone Depletion. 19. Climate Change. 20. Water Pollution. 21. Solid and Hazardous Waste. 22. Urbanization and Sustainability. PART VI: SUSTAINING HUMAN SOCIETIES. 23. Economics, Environment, and Sustainability. 24. Politics, Environment, and Sustainability. 25. Environmental Worldviews, Ethics, and Sustainability. Glossary. Index.

AE ENVIRONMENTAL SCIENCE, 16E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2019, 576pp, Paperback, 9789814846257

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Partnering with National Geographic Learning, Miller and Spoolman deliver a text that equips students with the inspiration and knowledge to help solve modern environmental issues. ENVIRONMENTAL SCIENCE, 16th Edition, highlights important work of scientists and citizens, while photos, maps and illustrations bring course content to life. A concept-centered approach transforms complex topics into key concepts students understand. Using sustainability as their central theme, the authors emphasize natural capital, natural capital degradation, solutions, trade-offs and the importance of individuals. Students learn how nature works, how they interact with it and how humanity can continue to sustain its relationship with the earth by applying nature's lessons to economies and individual lifestyles. Available with MindTap, the platform that gives instructors complete control of their course and powers students from memorization to mastery.

CONTENTS

ENVIRONMENTAL SCIENCE, 16E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2019, 544pp, Paperback, 9781337569613

CENGAGE | MINDTAP *ebook*

The 16th Edition of ENVIRONMENTAL SCIENCE is "inspiring people to care about the planet." Partnering with National Geographic Learning, the authors Tyler Miller and Scott Spoolman deliver a text that equips and inspires you with the tools and knowledge to make a difference solving today's environmental issues. Exclusive content highlights important work of National Geographic explorers and grantees and features vivid photos, maps and illustrations that bring course concepts to life. Using sustainability as their central theme, the authors emphasize natural capital, natural capital degradation, solutions, trade-offs and the importance of individuals. In return, you learn how nature works, how you interact with it and how humanity can continue to sustain its relationship with the earth by applying nature's lessons to economies and individual lifestyles.

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ENVIRONMENTAL SCIENCE, 15E

G. Tyler Miller Jr., President, Earth Education and Research; Scott Spoolman

© 2016, 592pp, Paperback, 9781305090446

CENGAGE | MINDTAP ebook

Featuring a new partnership with the National Geographic Society, LIVING IN THE ENVIRONMENT, 18e,maintains its focus on sustainability and equips students with the inspiration and knowledge they need to make a difference solving today's environmental issues.

CONTENTS

HUMANS AND SUSTAINABILITY: AN OVERVIEW. 1. Environmental Problems, Their Causes, and Sustainability. ECOLOGY AND SUSTAINABILITY. 2. Science, Matter, Energy, and Systems. 3. Ecosystems: What Are They and How Do They Work? 4. Biodiversity and Evolution. 5. Species Interactions, Ecological Succession, and Population Control. 6. The Human Population and Urbanization. 7. Climate and Biodiversity. SUSTAINING BIODIVERSITY. 8. Sustaining Biodiversity: Saving Species and Ecosystem Services. 9. Sustaining Biodiversity: Saving Ecosystems and Ecosystem Services. SUSTAINING RESOURCES AND ENVIRONMENTAL QUALITY. 10. Food Production and the Environment. 11. Water Resources and Water Pollution. 12. Geology and Nonrenewable Mineral Resources. 13. Energy Resources. 14. Environmental Hazards and Human Health. 15. Air Pollution, Climate Change, and Ozone Depletion. 16. Solid and Hazardous Waste. SUSTAINING HUMAN SOCIETIES. 17. Environmental Economics, Politics, and Worldviews. SUPPLEMENTS. Supplement 1: Measurement Units. Supplement 2: Reading Graphs and Maps. Supplement 3: Some Basic Chemistry. Supplement 4: Maps and Map Analysis. Supplement 5: Environmental Data and Data Analysis. Supplement 6: Geological and Biological Time Scale. Supplement 7: Principles of Sustainability.

ENVIRONMENTAL ISSUES AND SOLUTIONS

A Modular Approach

Norman Myers; Scott Spoolman

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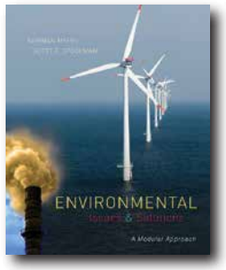

Focused on and organized around environmental issues, this innovative new book helps you critically evaluate possible solutions to the environmental problems we now face. The authors outline specific environmental issues and provide the scientific background to enable you to understand each issue. In order to find and apply solutions to these problems, they help you see that the problems are not insurmountable and that something can be done to achieve a sustainable future. The modular chapters provide full descriptions of each of the major environmental problems with real stories about what people are doing to tackle the resulting challenges. Available with InfoTrac® Student Collections http://gocengage.com/infotrac.

CONTENTS

1. Environmental Science and Sustainability. 2. Population Growth. 3. Urbanization. 4. Food Resources. 5. Energy Efficiency and Renewable Energy. 6. Nonrenewable Energy. 7. Mineral Resources. 8. Species Extinction. 9. Land Degradation. 10. Water Resources. 11. Water Pollution. 12. Air Pollution. 13. Climate Change. 14. Wastes. 15. Environmental Health Hazards.

NEW EDITION

WORLD REGIONAL GEOGRAPHY, 7E

Joseph J. Hobbs, University of Missouri, Columbia

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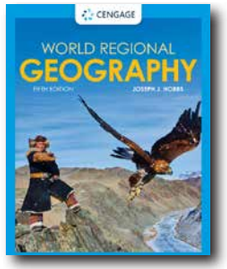

PHYSICS

INTRODUCTION TO PHYSICAL SCIENCE

NEW EDITION

AN INTRODUCTION TO PHYSICAL SCIENCE, 15E

James T. Shipman, Ohio University; Jerry D. Wilson, Lander University; Charles A. Higgins, Jr., Middle Tennessee State University; Bo Lou, Ferris State University

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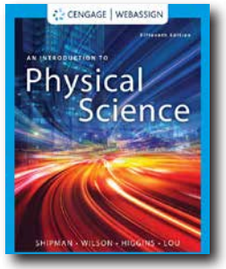

Succeed in your non-science majors course with this easy-to-understand text that presents the fundamental concepts of the five divisions of physical sciences (physics, chemistry, astronomy, meteorology and geology). This updated fifteenth edition includes timely and relevant applications and a WebAssign course with a mobile-friendly ebook and active-learning modules to enhance your learning experience.

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Preface. 1. Measurement. 2. Motion. 3. Force and Motion. 4. Work and Energy. 5. Temperature and Heat. 6. Waves and Sound. 7. Optics and Wave Effects. 8. Electricity and Magnetism. 9. Atomic Physics. 10. Nuclear Physics. 11. The Chemical Elements. 12. Chemical Bonding. 13. Chemical Reactions. 14. Organic Chemistry. 15. Place and Time. 16. The Solar System. 17. Moons and Small Solar System Bodies. 18. The Universe. 19. The Atmosphere. 20. Atmospheric Effects. 21. Structural Geology and Plate Tectonics. 22. Minerals, Rocks, and Volcanoes. 23. Surface Processes. 24. Geologic Time. Appendix A. The Seven Base Units of the International System of Units (SI)

Appendix B. Solving Mathematical Problems in Science. Appendix C. Equation Rearrangement. Appendix D. Analysis of Units. Appendix E. Positive and Negative Numbers. Appendix F. Powers-of-10 Notation. Appendix G. Significant Figures. Appendix H. Psychrometric Tables (pressure: 30 in. of Hg). Appendix I. Seasonal Star Charts. Answers to Confidence Exercises. Answers to Selected Questions. Glossary. Index.

INTRODUCTORY PHYSICS

AE PHYSICS FOR SCIENTISTS AND ENGINEERS WITH MODERN PHYSICS, 10E

Raymond A. Serway, James Madison University (Emeritus); John W. Jewett, California State Polytechnic University, Pomona

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Taking an integrative approach, market-leading PHYSICS FOR SCIENTISTS AND ENGINEERS WITH MODERN PHYSICS, Tenth Edition seamlessly matches curated content to the learning environment for which it was intended--from in-class group problem solving to online homework that utilizes targeted feedback and tutorials. More student friendly than ever, the text includes new context-rich exercises, Think-Pair-Share problems, MCAT-style passage problems and sound educational pedagogy. The unified art program and detailed worked examples compliment the concise language and meticulous instruction for which Raymond A. Serway and John W. Jewett Jr. are known. In addition, WebAssign--the world's easiest to use homework system--equips you with the definitive solution to your homework and assessment needs to maximize your course success.

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Part I: MECHANICS. 1. Physics and Measurement. 2. Motion in One Dimension. 3. Vectors. 4. Motion in Two Dimensions. 5. The Laws of Motion. 6. Circular Motion and Other Applications of Newton's Laws. 7. Energy of a System. 8. Conservation of Energy. 9. Linear Momentum and Collisions. 10. Rotation of a Rigid Object About a Fixed Axis. 11. Angular Momentum. 12. Static Equilibrium and Elasticity. 13. Universal Gravitation. 14. Fluid Mechanics. Part II: OSCILLATIONS AND MECHANICAL WAVES. 15. Oscillatory Motion. 16. Wave Motion. 17. Superposition and Standing Waves. Part III: THERMODYNAMICS. 18. Temperature. 19. Heat and the First Law of Thermodynamics. 20. The Kinetic Theory of Gases. 21. Heat Engines, Entropy, and the Second Law of Thermodynamics. Part IV: ELECTRICITY AND MAGNETISM. 22. Electric Fields. 23. Continuous Charge Distributions and Gauss's Law. 24. Electric Potential. 25. Capacitance and Dielectrics. 26. Current and Resistance. 27. Direct Current Circuits. 28. Magnetic Fields. 29. Sources of the Magnetic Field. 30. Faraday's Law. 31. Inductance. 32. Alternating Current Circuits. 33. Electromagnetic Waves. Part V: LIGHT AND OPTICS. 34. The Nature of Light and the Laws of Geometric Optics. 35. Image Formation. 36. Interference of Light Waves. 37. Diffraction Patterns and Polarization. Part VI: MODERN PHYSICS. 38. Relativity. 39. Introduction to Quantum Physics. 40. Quantum Mechanics. 41. Atomic Physics. 42. Molecules and Solids. 43. Nuclear Physics. 44. Particle Physics and Cosmology. APPENDICES. A. Tables. B. Mathematics Review. C. Periodic Table of the Elements. D. SI Units. Answers to Quick Quizzes and Odd-Numbered Problems. Index.

PHYSICS FOR SCIENTISTS AND ENGINEERS, 10E

Raymond A. Serway, James Madison University (Emeritus); John W. Jewett, California State Polytechnic University, Pomona

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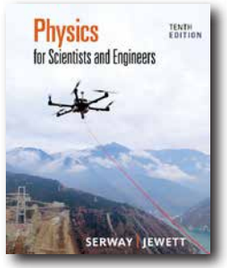

Maximize your course success by making the most of what Serway/Jewett's PHYSICS FOR SCIENTISTS AND ENGINEERS, Tenth Edition, has to offer. From a host of in-text features to a range of outstanding technology resources, you'll have everything you need to understand the natural forces and principles of physics. New context-rich exercises, Think-Pair-Share problems and MCAT-style passage problems enable you to put what you learn into practice. Also available, WebAssign is the world's easiest to use homework system. Throughout every chapter, the authors have built in a wide range of examples, exercises and illustrations that will help you understand the laws of physics AND succeed in your course!

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PART I: MECHANICS. 1. Physics and Measurement. 2. Motion in One Dimension. 3. Vectors. 4. Motion in Two Dimensions. 5. The Laws of Motion. 6. Circular Motion and Other Applications of Newton's Laws. 7. Energy of a System. 8. Conservation of Energy. 9. Linear Momentum and Collisions. 10. Rotation of a Rigid Object About a Fixed Axis. 11. Angular Momentum. 12. Static Equilibrium and Elasticity. 13. Universal Gravitation. 14. Fluid Mechanics. PART II: OSCILLATIONS AND MECHANICAL WAVES. 15. Oscillatory Motion. 16. Wave Motion. 17. Superposition and Standing Waves. PART III: THERMODYNAMICS. 18. Temperature. 19. The First Law of Thermodynamics. 20. The Kinetic Theory of Gases. 21. Heat Engines, Entropy, and the Second Law of Thermodynamics. Part IV: ELECTRICITY AND MAGNETISM. 22. Electric Fields. 23. Continuous Charge Distributions and Gauss's Law. 24. Electric Potential. 25. Capacitance and Dielectrics. 26. Current and Resistance. 27. Direct-Current Circuits. 28. Magnetic Fields. 29. Sources of the Magnetic Field. 30. Faraday's Law. 31. Inductance. 32. Alternating-Current Circuits. 33. Electromagnetic Waves. PART V: LIGHT AND OPTICS. 34. The Nature of Light and the Principles of Ray Optics 35. Image Formation. 36. Wave Optics. 37. Diffraction Patterns and Polarization. PART VI: MODERN PHYSICS. 38. Relativity. APPENDICES. A. Tables. B. Mathematics Review. C. Periodic Table of the Elements. D. SI Units. Answers to Quick Quizzes and Odd-Numbered Problems. Index.

PHYSICS FOR SCIENTISTS AND ENGINEERS WITH MODERN PHYSICS, 10E

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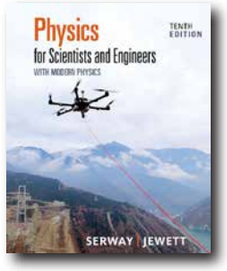

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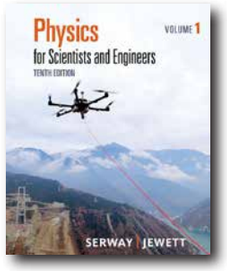

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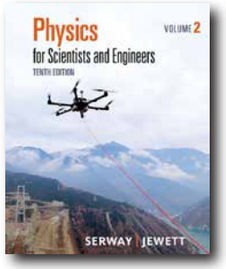

Maximize your course success by making the most of what Serway/Jewett's PHYSICS FOR SCIENTISTS AND ENGINEERS WITH MODERN PHYSICS has to offer. From a host of in-text features to a range of outstanding technology resources, you'll have everything you need to understand the natural forces and principles of physics. New context-rich exercises, Think-Pair-Share problems and MCAT-style passage problems enable you to put what you learn into practice. Also available, WebAssign is the world's easiest-to-use homework system. Throughout every chapter, the authors have built in a wide range of examples, exercises and illustrations that will help you understand the laws of Physics AND succeed in your course!

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COLLEGE PHYSICS, 11E

Raymond A. Serway, James Madison University (Emeritus); Chris Vuille, Embry-Riddle Aeronautical University

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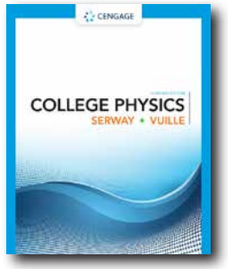

Succeed in your course, improve your problem-solving skills, and enrich your understanding of the world around you with COLLEGE PHYSICS, Eleventh Edition! This proven text combines a logical presentation of physical concepts with a consistent strategy for solving problems and an unparalleled array of worked examples to help you master the concepts and skills of the course.

CONTENTS

PART I: MECHANICS. 1. Units, Trigonometry, and Vectors. Standards of Length, Mass, and Time. The Building Blocks of Matter. Dimensional Analysis. Uncertainty in Measurement and Significant Figures. Unit Conversions for Physical Quantities. Estimates and Order-of-Magnitude Calculations. Coordinate Systems. Trigonometry Review. Vectors. Components of a Vector. Problem-Solving Strategy. 2. Motion in One Dimension. Displacement, Velocity, and Acceleration. Motion Diagrams. One-Dimensional Motion with Constant Acceleration. Freely Falling Objects. 3. Motion in Two Dimensions. Displacement, Velocity, and Acceleration in Two Dimensions. Two-Dimensional Motion. Relative Velocity. 4. Newton's Laws of Motion. Forces. The Laws of Motion. The Normal and Kinetic Friction Forces. Static Friction Forces. Tension Forces. Applications of Newton's Laws. Two-Body Problems. 5. Energy. Work. Kinetic Energy and the Work–Energy Theorem. Gravitational Potential Energy. Gravity and Nonconservative Forces. Spring Potential Energy. Systems and Energy Conservation. Power. Work Done by a Varying Force. 6. Momentum, Impulse, and Collisions. Momentum and Impulse. Conservation of Momentum. Collisions in One Dimension. Glancing Collisions. Rocket Propulsion. 7. Rotational Motion and Gravitation. Angular Velocity and Angular Acceleration. Rotational Motion Under Constant Angular Acceleration. Tangential Velocity, Tangential Acceleration, and Centripetal Acceleration. Newton's Second Law for Uniform Circular Motion. Newtonian Gravitation. 8. Rotational Equilibrium and Dynamics. Torque. Center of Mass and its Motion. Torque and the Two Conditions for Equilibrium. The Rotational Second Law of Motion. Rotational Kinetic Energy. Angular Momentum. 9. Fluids and Solids. States of Matter. Density and Pressure. Variation of Pressure with Depth. Pressure Measurements. Buoyant Forces and Archimedes' Principle. Fluids in Motion. Other Applications of Fluid Dynamics. 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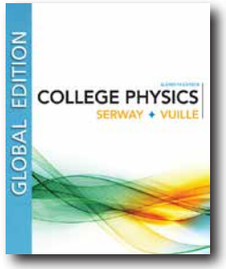

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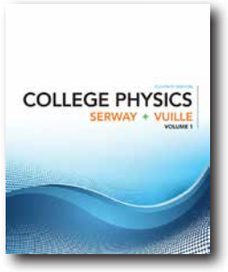

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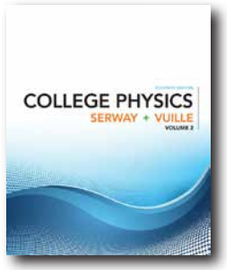

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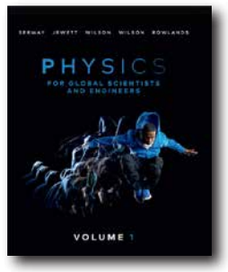

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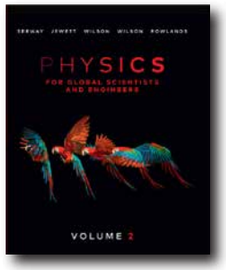

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Foundations and Connections, Extended Version with Modern Physics

Debora M. Katz, United States Naval Academy

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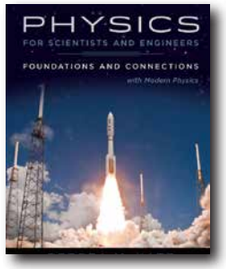

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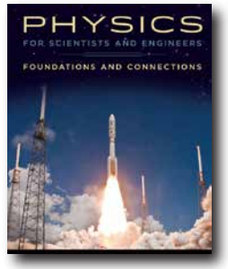

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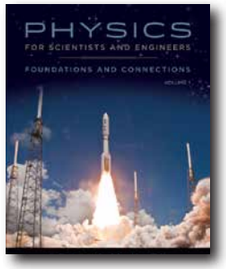

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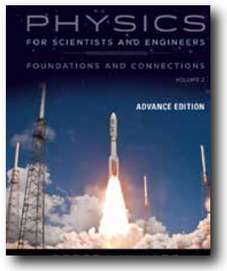

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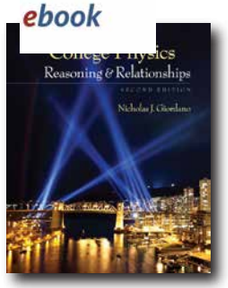

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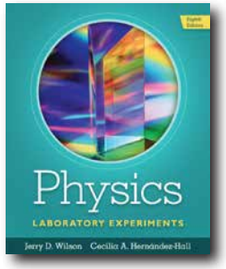

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David Loyd, Angelo State University

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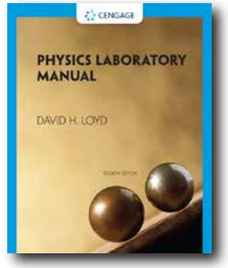

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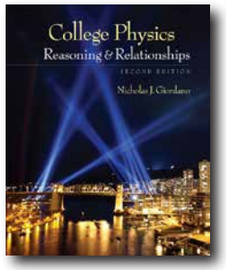

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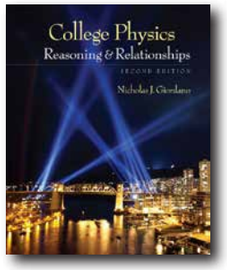

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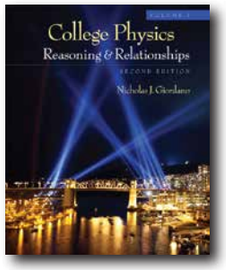

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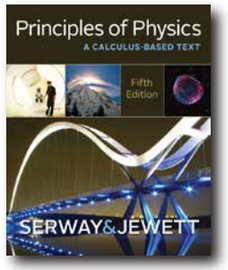

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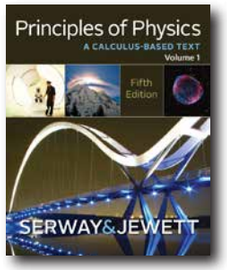

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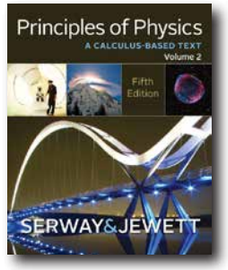

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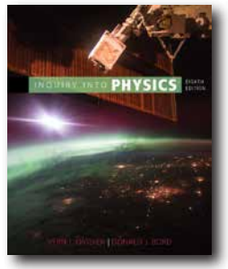

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Roger A. Hinrichs, State University of New York, Oswego; Merlin H. Kleinbach, State University of New York, Oswego

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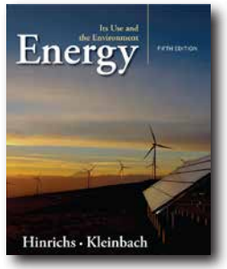

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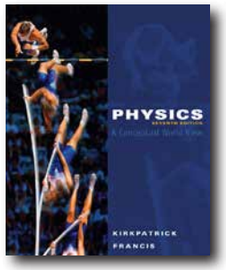

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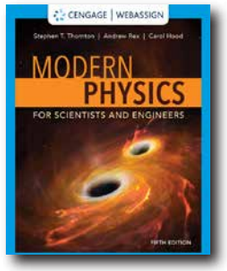

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SPECIALIZED COURSES

ENERGY, 5E
Its Use and the Environment

Roger A. Hinrichs, State University of New York, Oswego;
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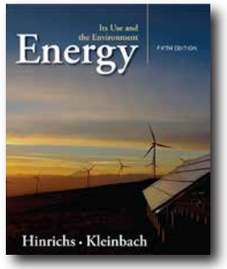

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