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Exciting engineering experiments for kids ages 3 to 5 Kids are curious about how stuff works! They like to ask questions, come up with ideas, and try things out for themselves. **Big Engineering Experiments for Little Kids** helps activate their imaginations and shows them real engineering in action. When STEAM learning starts early, kids can prepare for scholastic success and a lifelong habit of creative and analytical thinking. Dive into engineering for kids with: 20 kid-friendly experiments--With some basic household items, kids can build a spaghetti bridge, construct a flying paper airplane, and feel how sound travels through their body! Easy instructions--These experiments are simple enough for kids to do with just a little help from a grownup, so they can practice independent learning. Engineering exploration--Each experiment shows off a different facet of engineering for kids, with explanations and thoughtful questions that illustrate how it works. Encourage little ones to explore the workings of the world with a fun book of activities that explore engineering for kids. Connect with the insights of an award-winning engineer to navigate a world recovering from the COVID-19 pandemic. Dr. Jayshree Seth zooms in on the issues of science and leadership through the lens of personal and professional transitions, reflections, and actions. The second book in **The Heart of Science Series**, **Engineering Fine Print** offers perspective on the feelings, identities, needs, and experiences encountered through these major shifts while envisioning the equitable and sustainable aspects of an improved normal that we can all work towards. **Engineering Fine Print** interweaves a beautiful tapestry of thought leadership, providing a voice not often heard for those seeking career guidance, striving for personal growth, or simply looking for inspiration. "Just as the intersections among rapidly evolving disciplines have driven scientific and technological

progress, The Heart of Science series explores cross-currents between that progress and societal needs and belief systems... An insightful and inspiring analysis." - Susan Hockfield, Ph.D., MIT President Emerita and Author of The Age of Living Machines "Engineering Fine Print is a must read for those who are grappling with the rapidly shifting landscapes in business, product development, and life." - Brian Solis, Best-selling Author of Lifescale and X "Heartfelt, passionate, and deeply personal...Jayshree explores the critical role that science plays in bringing hope to society. She embraces the beauty of dialectical thinking as an aspect of leadership guided by her own Asian heritage." - Jane Hyun, Author of Breaking the Bamboo Ceiling and Co-Author of Flex Jayshree Seth, Ph.D., is an author, internationally sought-after speaker, career engineer, prolific inventor, distinguished alumni, and occasional songwriter. As a Corporate Scientist at 3M who holds 72 patents for a variety of innovations, she was appointed 3M's first ever Chief Science Advocate in 2018. She uses her scientific knowledge, technical expertise, and professional experience to advance science and communicate the benefits of science and the importance of diversity in STEM fields. Jayshree's perspective is recognized across organizations on a multitude of topics such as innovation, leadership, and STEM advocacy. All proceeds of The Heart of Science Series go to a scholarship for underrepresented minority women in STEM, administered by the Society of Women Engineers. For engineering and scientific endeavors to progress there must be generally accepted ethical guidelines in place to which engineers and scientists must adhere. This book explores the various scientific and engineering disciplines, examining the potential for unethical behavior by professionals. Documented examples are presented to show where unethical behavior could have been halted before it became an issue. The authors also look to the future to see what is in store for professionals in the scientific and engineering disciplines and how the potential for unethical behavior can be negated. From time to time, it is necessary to alert the research and policy communities to opportunities for action in areas of mutual concern. One such area is the participation and utilization of women in science and engineering in the United States. This book explores the underparticipation of women in these fields and presents a strategic plan to bring qualified women into such careers as researchers, teachers, and practitioners of science and engineering. Science for Engineering offers an introductory textbook for students of engineering science and assumes no prior background in engineering. John Bird focuses upon examples rather than theory, enabling students to develop a sound understanding of engineering systems in terms of the basic laws and principles. This book includes over 580 worked examples, 1300 further problems, 425 multiple choice questions (with answers), and contains sections covering the mathematics that students will require within their engineering studies, mechanical applications, electrical applications and engineering systems. This new edition of Science for Engineering covers

the fundamental scientific knowledge that all trainee engineers must acquire in order to pass their exams. It has also been brought fully in line with the compulsory science and mathematics units in the new engineering course specifications. Supported by free lecturer materials that can be found at [www.routledge/cw/bird](http://www.routledge/cw/bird) This resource includes full worked solutions of all 1300 of the further problems for lecturers/instructors use, and the full solutions and marking scheme for the fifteen revision tests. In addition, all illustrations will be available for downloading. A New York Times Bestseller Explainer-in-Chief David Macaulay updates the worldwide bestseller *The New Way Things Work* to capture the latest developments in the technology that most impacts our lives. Famously packed with information on the inner workings of everything from windmills to Wi-Fi, this extraordinary and humorous book both guides readers through the fundamental principles of machines, and shows how the developments of the past are building the world of tomorrow. This sweepingly revised edition embraces all of the latest developments, from touchscreens to 3D printer. Each scientific principle is brilliantly explained--with the help of a charming, if rather slow-witted, woolly mammoth. An illustrated survey of significant inventions closes the book, along with a glossary of technical terms, and an index. What possible link could there be between zippers and plows, dentist drills and windmills? Parking meters and meat grinders, jumbo jets and jackhammers, remote control and rockets, electric guitars and egg beaters? Macaulay explains them all. As science and technology advance, the needs of employers change, and these changes continually reshape the job market for scientists and engineers. Such shifts present challenges for students as they struggle to make well-informed education and career choices. *Careers in Science and Engineering* offers guidance to students on planning careers--particularly careers in nonacademic settings--and acquiring the education necessary to attain career goals. This booklet is designed for graduate science and engineering students currently in or soon to graduate from a university, as well as undergraduates in their third or fourth year of study who are deciding whether or not to pursue graduate education. The content has been reviewed by a number of student focus groups and an advisory committee that included students and representatives of several disciplinary societies. *Careers in Science and Engineering* offers advice on not only surviving but also enjoying a science- or engineering-related education and career-- how to find out about possible careers to pursue, choose a graduate school, select a research project, work with advisers, balance breadth against specialization, obtain funding, evaluate postdoctoral appointments, build skills, and more. Throughout, *Careers in Science and Engineering* lists resources and suggests people to interview in order to gather the information and insights needed to make good education and career choices. The booklet also offers profiles of science and engineering professionals in a variety of careers. *Careers in Science and Engineering* will be important to undergraduate and

graduate students who have decided to pursue a career in science and engineering or related areas. It will also be of interest to faculty, counselors, and education administrators. Based primarily on a conference, this book examines the need for interventions to increase the number of U.S. students, both males and females, pursuing careers in the sciences and engineering and describes interventions supported by the private and public sectors at the undergraduate and graduate levels of education. The individually authored chapters also describe actions taken by employers of scientists and engineers to retain their technical work force. This book provides an essential overview of wind science and engineering, taking readers on a journey through the origins, developments, fundamentals, recent advancements and latest trends in this broad field. Along the way, it addresses a diverse range of topics, including: atmospheric physics; meteorology; micrometeorology; climatology; the aerodynamics of buildings, aircraft, sailing boats, road vehicles and trains; wind energy; atmospheric pollution; soil erosion; snow drift, windbreaks and crops; bioclimatic city-planning and architecture; wind actions and effects on structures; and wind hazards, vulnerability and risk. In order to provide a comprehensive overview of wind and its manifold effects, the book combines scientific, descriptive and narrative chapters. The book is chiefly intended for students and lecturers, for those who want to learn about the genesis and evolution of this topic, and for the multitude of scholars whose work involves the wind. "This edited volume includes eighteen chapters and discusses various research challenges in science, engineering and technology. Topics discussed include learning methods of artificial intelligence, computerized medical image processing, human-computer interaction for detection of hand gestures, community energy storage, e-learning, prediction of diabetic risk, hydrogen fuel cells for automobiles, solar cells, and more"-- Careers in science, engineering, and medicine offer opportunities to advance knowledge, contribute to the well-being of communities, and support the security, prosperity, and health of the United States. But many women do not pursue or persist in these careers, or advance to leadership positions - not because they lack the talent or aspirations, but because they face barriers, including: implicit and explicit bias; sexual harassment; unequal access to funding and resources; pay inequity; higher teaching and advising loads; and fewer speaking invitations, among others. There are consequences from this underrepresentation of women for the nation as well: a labor shortage in many science, engineering, and medical professions that cannot be filled unless institutions and organizations recruit from a broad and diverse talent pool; lost opportunities for innovation and economic gain; and lost talent as a result of discrimination, unconscious bias, and sexual harassment. Promising Practices for Addressing the Underrepresentation of Women in Science, Engineering, and Medicine reviews and synthesizes existing research on policies, practices, programs, and other interventions for improving the recruitment, retention, and sustained

advancement into leadership roles of women in these disciplines. This report makes actionable recommendations to leverage change and drive swift, coordinated improvements to the systems of education, research, and employment in order to improve both the representation and leadership of women. Resumen: Are you a post-graduate student in Engineering, Science or Technology who needs to know how to: Prepare abstracts, theses and journal papers Present your work orally Present a progress report to your funding body Would you like some guidance aimed specifically at your subject area? ... This is the book for you; a practical guide to all aspects of post-graduate documentation for Engineering, Science and Technology students, which will prove indispensable to readers. Writing for Science and Engineering will prove invaluable in all areas of research and writing due its clear, concise style. The practical advice contained within the pages alongside numerous examples to aid learning will make the preparation of documentation much easier for all students. A complete lexicon of technical information, the Dictionary of Computer Science, Engineering, and Technology provides workable definitions, practical information, and enhances general computer science and engineering literacy. It spans various disciplines and industry sectors such as: telecommunications, information theory, and software and hardware systems. If you work with, or write about computers, this dictionary is the single most important resource you can put on your shelf. The dictionary addresses all aspects of computing and computer technology from multiple perspectives, including the academic, applied, and professional vantage points. Including more than 8,000 terms, it covers all major topics from artificial intelligence to programming languages, from software engineering to operating systems, and from database management to privacy issues. The definitions provided are detailed rather than concise. Written by an international team of over 80 contributors, this is the most comprehensive and easy-to-read reference of its kind. If you need to know the definition of anything related to computers you will find it in the Dictionary of Computer Science, Engineering, and Technology. The COVID-19 pandemic is resulting in widespread and ongoing changes to how the K-12 education system functions, including disruptions to science teaching and learning environments. Students and teachers are all figuring out how to do schooling differently, and districts and states are working overtime to reimagine systems and processes. This is difficult and stressful work in the middle of the already stressful and sometimes traumatic backdrop of the global pandemic. In addition, students with disabilities, students of color, immigrants, English learners, and students from under-resourced communities have been disproportionately affected, both by the pandemic itself and by the resulting instructional shifts. Teaching K-12 Science and Engineering During a Crisis aims to describe what high quality science and engineering education can look like in a time of great uncertainty and to support practitioners as they work toward their goals. This book includes guidance for science and

engineering practitioners - with an emphasis on the needs of district science supervisors, curriculum leads, and instructional coaches. Teaching K-12 Science and Engineering During a Crisis will help K-12 science and engineering teachers adapt learning experiences as needed to support students and their families dealing with ongoing changes to instructional and home environments and at the same time provide high quality in those experiences. This unique book is designed to serve as an active learning tool that uses carefully selected information and guided inquiry questions. Guided inquiry helps readers reach true understanding of concepts as they develop greater ownership over the material presented. First, background information or data is presented. Then, concept invention questions lead the students to construct their own understanding of the fundamental concepts represented. Finally, application questions provide the reader with practice in solving problems using the concepts that they have derived from their own valid conclusions. **KEY TOPICS:** What is Guided Inquiry?; What is Materials Science and Engineering?; Bonding; Atomic Arrangements in Solids; The Structure of Polymers; Microstructure: Phase Diagrams; Diffusion; Microstructure: Kinetics; Mechanical Behavior; Materials in the Environment; Electronic Behavior; Thermal Behavior; Materials Selection and Design. MasteringEngineering, the most technologically advanced online tutorial and homework system available, can be packaged with this edition. MasteringEngineering is designed to provide students with customized coaching and individualized feedback to help improve problem-solving skills while providing instructors with rich teaching diagnostics. Note: If you are purchasing the standalone text (ISBN: 0132136422) or electronic version, MasteringEngineering does not come automatically packaged with the text. To purchase MasteringEngineering, please visit: [www.masteringengineering.com](http://www.masteringengineering.com) or you can purchase a package of the physical text + MasteringEngineering by searching the Pearson Higher Education web site. MasteringEngineering is not a self-paced technology and should only be purchased when required by an instructor. **MARKET:** For students taking the Materials Science course in the Mechanical & Aerospace Engineering department. This book is also suitable for professionals seeking a guided inquiry approach to materials science. A guide to making scientific photographs for presentations, journal submissions, and covers, featuring step-by-step instructions and case studies, by an award-winning science photographer; illustrated in color throughout. One of the most powerful ways for scientists to document and communicate their work is through photography. Unfortunately, most scientists have little or no training in that craft. In this book, celebrated science photographer Felice Frankel offers a guide for creating science images that are both accurate and visually stunning. Picturing Science and Engineering provides detailed instructions for making science photographs using the DSLR camera, the flatbed scanner, and the phone camera. The book includes a series of step-by-step case studies, describing how final images were

designed for cover submissions and other kinds of visualizations. Lavishly illustrated in color throughout, the book encourages the reader to learn by doing, following Frankel as she recreates the stages of discovery that lead to a good science visual. Frankel shows readers how to present their work with graphics--how to tell a visual story--and considers issues of image adjustment and enhancement. She describes how developing the right visual to express a concept not only helps make science accessible to nonspecialists, but also informs the science itself, helping scientists clarify their thinking. Within the book are specific URLs where readers can view Frankel's online tutorials--visual "punctuations" of this printed edition. Additional materials, including tutorials and videos, can be found online at the book's website. Published with the help of funding from Furthermore: a program of the J. M. Kaplan fund Today the image of the scientist is still that of a white man in a white lab coat. This book questions this stereotype and the assumption that the practitioners of science and engineering have a uniform look and follow one particular path through life. The scientists and engineers featured in this book are all women. They come from different races, ethnicities, and socioeconomic backgrounds. They have different sexual orientations. Some have disabilities. The core of this book is 88 profiles with photographs of women scientists and engineers whose diversity is stunning. Journeys of Women in Science and Engineering includes research scientists and engineers in areas from biochemistry to mathematics, from neuroscience to computer science, from animal science to civil engineering. Explore big ideas with the Science Advocate in Chief through this collection of insights, reflections, and tips. Compiled from a career that spans over 25 years and more than 65 patents, Dr. Jayshree Seth discusses our relationship with science, technology, and engineering while offering her unique perspective on topics surrounding advocacy, interdisciplinary contexts, dynamic leadership, and inclusive progress. This book comprises high-quality refereed research papers presented at the Third International Conference on Computer Science, Engineering and Education Applications (ICCSEEA2020), held in Kyiv, Ukraine, on 21–22 January 2020, organized jointly by National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute”, National Aviation University, and the International Research Association of Modern Education and Computer Science. The topics discussed in the book include state-of-the-art papers in computer science, artificial intelligence, engineering techniques, genetic coding systems, deep learning with its medical applications, and knowledge representation with its applications in education. It is an excellent source of references for researchers, graduate students, engineers, management practitioners, and undergraduate students interested in computer science and their applications in engineering and education. Transparencies to Accompany Physics for Students of Science and Engineering is a collection of 151 transparencies, illustrations, figures, and a table of moments of inertia of some common shapes that students in physics,

science or engineering will find useful in advancing their course. One type of figure concerns vectors, particularly a graphical addition of three vectors, a graphical representation of vector subtraction, and of a particle in uniform circular motion. The illustrations show the construction of a force diagram with the subject block in the force diagram represented as a particle at the origin of a rectangular coordinate system. Other illustrations include the construction of force diagrams for a two-body system and for a block moving down an inclined plane. The illustrations depict an object on a horizontal surface resting, resting with a small horizontal force applied, resting with a great horizontal force applied without moving the object, and moving at a constant velocity with a horizontal force applied. Another figure shows a section of a thin soap film with air on either side of the film, with the light reaching each surface of the film partly reflected and partly transmitted. Each surface in the diagram indicates the phase changes that occur upon reflection. Some examples of moments of inertia include those of a hoop, disk, uniform solid sphere, and a uniform long, thin rod. The book is an aid to students and to professors of physics, calculus, and related courses in science or engineering. In presenting recent research in rice science and engineering, this book provides a systematic overview of rice from farming to consumption. It covers each stage of rice production, from pre-harvest to storage, processing, and product applications. It includes the latest knowledge and efforts of rice researchers to improve the methods of harvesting, handling, drying, storage, and milling. The book also reveals advances that have led to functionalizing rice components and making rice production more sustainable. In addition, the book explains methods for improving nutritional quality of rice-based diets through fortification. Utilization of by-products, such as rice bran and hulls, is also addressed. Case studies and pedagogical strategies to help science and engineering students improve their writing and speaking skills while developing professional identities. To many science and engineering students, the task of writing may seem irrelevant to their future professional careers. At MIT, however, students discover that writing about their technical work is important not only in solving real-world problems but also in developing their professional identities. MIT puts into practice the belief that “engineers who don't write well end up working for engineers who do write well,” requiring all students to take “communications-intensive” classes in which they learn from MIT faculty and writing instructors how to express their ideas in writing and in presentations. Students are challenged not only to think like professional scientists and engineers but also to communicate like them. This book offers in-depth case studies and pedagogical strategies from a range of science and engineering communication-intensive classes at MIT. It traces the progress of seventeen students from diverse backgrounds in seven classes that span five departments. Undergraduates in biology attempt to turn scientific findings into a research article; graduate students learn to define their research for scientific grant writing; undergraduates in biomedical

engineering learn to use data as evidence; and students in aeronautic and astronautic engineering learn to communicate collaboratively. Each case study is introduced by a description of its theoretical and curricular context and an outline of the objectives for the students' activities. The studies describe the on-the-ground realities of working with faculty, staff, and students to achieve communication and course goals, offering lessons that can be easily applied to a wide variety of settings and institutions. Highly effective thinking is an art that engineers and scientists can be taught to develop. By presenting actual experiences and analyzing them as they are described, the author conveys the developmental thought processes employed and shows a style of thinking that leads to successful results is something that can be learned. Along with spectacular successes, the author also conveys how failures contributed to shaping the thought processes. Provides the reader with a style of thinking that will enhance a person's ability to function as a problem-solver of complex technical issues. Consists of a collection of stories about the author's participation in significant discoveries, relating how those discoveries came about and, most importantly, provides analysis about the thought processes and reasoning that took place as the author and his associates progressed through engineering problems. As science and technology advance, the needs of employers change, and these changes continually reshape the job market for scientists and engineers. Such shifts present challenges for students as they struggle to make well-informed education and career choices. Careers in Science and Engineering offers guidance to students on planning careers--particularly careers in nonacademic settings--and acquiring the education necessary to attain career goals. This booklet is designed for graduate science and engineering students currently in or soon to graduate from a university, as well as undergraduates in their third or fourth year of study who are deciding whether or not to pursue graduate education. The content has been reviewed by a number of student focus groups and an advisory committee that included students and representatives of several disciplinary societies. Careers in Science and Engineering offers advice on not only surviving but also enjoying a science- or engineering-related education and career-- how to find out about possible careers to pursue, choose a graduate school, select a research project, work with advisers, balance breadth against specialization, obtain funding, evaluate postdoctoral appointments, build skills, and more. Throughout, Careers in Science and Engineering lists resources and suggests people to interview in order to gather the information and insights needed to make good education and career choices. The booklet also offers profiles of science and engineering professionals in a variety of careers. Careers in Science and Engineering will be important to undergraduate and graduate students who have decided to pursue a career in science and engineering or related areas. It will also be of interest to faculty, counselors, and education administrators. This beginning graduate textbook teaches data science and machine learning methods for

modeling, prediction, and control of complex systems. Focusing primarily on core topics in mechanical and electrical science, students enrolled on a wide range of higher education engineering courses at undergraduate level will find Engineering Science, second edition, an invaluable aid to their learning. With updated and expanded content, this new edition covers sections on the mechanics of materials, dynamics, thermodynamics, electrostatics and electromagnetic principles, and a.c./d.c. circuit theory. Entirely new sections are devoted to the study of gyroscopes and the effect of applied torques on their behaviour, and the use of Laplace transformation as a tool for modelling complex networks of inductance, capacitance and resistance. In addition, a new overview of the decibel (dB) introduces a handy technique for expressing logarithmic ratios. Knowledge-check and review questions, along with activities, are included throughout the book, and the necessary background mathematics is integrated alongside the appropriate areas of engineering. The result is a clear and easily accessible textbook that encourages independent study and covers the essential scientific principles that students will meet at this level. The book is supported with a companion website for students and lecturers at [www.key2engineeringsscience.com](http://www.key2engineeringsscience.com), and it includes:

- Solutions to the Test Your Knowledge and Review Questions in the book
- Further guidance on Essential Mathematics with introductions to vectors, vector operations, the calculus and differential equations, etc.
- An extra chapter on steam properties, cycles and plant
- Downloadable SCILAB scripts that help simplify some of the advanced mathematical content
- Selected illustrations from the book

This collection of informative and pleasurable essays by Henry Petroski elucidates the role of engineers in shaping our environment in countless ways, big and small. In *Remaking the World* Petroski gravitates this time, perhaps, toward the big: the English Channel tunnel, the Panama Canal, Hoover Dam, the QE2, and the Petronas Twin Towers in Malaysia, now the tallest buildings in the world. He profiles Charles Steinmetz, the genius of the General Electric Company; Henry Martyn Robert, a military engineer who created Robert's Rules of Order; and James Nasmyth, the Scotsman whose machine tools helped shape nineteenth-century ocean and rail transportation. Petroski sifts through the fossils of technology for cautionary tales and remarkable twists of fortune, and reminds us that failure is often a necessary step on the path to new discoveries. He explains soil mechanics by way of a game of "rock, scissors, paper," and clarifies fundamental principles of engineering through the spokes of a Ferris wheel. Most of all, Henry Petroski continues to celebrate the men and women whose scrawls on the backs of envelopes have immeasurably improved our world. Science, engineering, and technology permeate nearly every facet of modern life and hold the key to solving many of humanity's most pressing current and future challenges. The United States' position in the global economy is declining, in part because U.S. workers lack fundamental knowledge in these fields. To address the critical issues of U.S.

competitiveness and to better prepare the workforce, A Framework for K-12 Science Education proposes a new approach to K-12 science education that will capture students' interest and provide them with the necessary foundational knowledge in the field. A Framework for K-12 Science Education outlines a broad set of expectations for students in science and engineering in grades K-12. These expectations will inform the development of new standards for K-12 science education and, subsequently, revisions to curriculum, instruction, assessment, and professional development for educators. This book identifies three dimensions that convey the core ideas and practices around which science and engineering education in these grades should be built. These three dimensions are: crosscutting concepts that unify the study of science through their common application across science and engineering; scientific and engineering practices; and disciplinary core ideas in the physical sciences, life sciences, and earth and space sciences and for engineering, technology, and the applications of science. The overarching goal is for all high school graduates to have sufficient knowledge of science and engineering to engage in public discussions on science-related issues, be careful consumers of scientific and technical information, and enter the careers of their choice. A Framework for K-12 Science Education is the first step in a process that can inform state-level decisions and achieve a research-grounded basis for improving science instruction and learning across the country. The book will guide standards developers, teachers, curriculum designers, assessment developers, state and district science administrators, and educators who teach science in informal environments. A guide to cloud computing for students, scientists, and engineers, with advice and many hands-on examples. The emergence of powerful, always-on cloud utilities has transformed how consumers interact with information technology, enabling video streaming, intelligent personal assistants, and the sharing of content. Businesses, too, have benefited from the cloud, outsourcing much of their information technology to cloud services. Science, however, has not fully exploited the advantages of the cloud. Could scientific discovery be accelerated if mundane chores were automated and outsourced to the cloud? Leading computer scientists Ian Foster and Dennis Gannon argue that it can, and in this book offer a guide to cloud computing for students, scientists, and engineers, with advice and many hands-on examples. The book surveys the technology that underpins the cloud, new approaches to technical problems enabled by the cloud, and the concepts required to integrate cloud services into scientific work. It covers managing data in the cloud, and how to program these services; computing in the cloud, from deploying single virtual machines or containers to supporting basic interactive science experiments to gathering clusters of machines to do data analytics; using the cloud as a platform for automating analysis procedures, machine learning, and analyzing streaming data; building your own cloud with open source software; and cloud security. The book is accompanied by a

website, Cloud4SciEng.org, that provides a variety of supplementary material, including exercises, lecture slides, and other resources helpful to readers and instructors. Comprehensive engineering science coverage that is fully in line with the latest vocational course requirements New chapters on heat transfer and fluid mechanics Topic-based approach ensures that this text is suitable for all vocational engineering courses Coverage of all the mechanical, electrical and electronic principles within one volume provides a comprehensive exploration of scientific principles within engineering Engineering Science is a comprehensive textbook suitable for all vocational and pre-degree courses. Taking a subject-led approach, the essential scientific principles engineering students need for their studies are topic-by-topic based in presentation. Unlike most of the textbooks available for this subject, Bill Bolton goes beyond the core science to include the mechanical, electrical and electronic principles needed in the majority of courses. A concise and accessible text is supported by numerous worked examples and problems, with a complete answer section at the back of the book. Now in its sixth edition, the text has been fully updated in line with the current BTEC National syllabus and will also prove an essential reference for students embarking on Higher National engineering qualifications and Foundation Degrees.

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