
Best Books Science Engineering

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Power, Speed, and Form CRC Press

With a visual approach to the STEM subjects, this book makes science easy to understand and shows kids how things work. From molecules and magnetism to rockets and radio waves, *How to Be Good at Science, Technology, and Engineering* makes complex scientific concepts simple to grasp. Dynamic, visual explanations break down even the trickiest of topics into small steps. Find out how a hot-air balloon rises, how erosion flattens mountains, how light waves zip through space, and how the human eye sees colors. Cool illustrations show the application of science in the real world: see how microchips, tractors, and suspension bridges work. "Try it out" boxes suggest ways children can see the science for themselves. Hands-on projects feature fun experiments to try at home or school: polish up old coins in vinegar, make an erupting volcano with baking soda, learn about different types of solutions, and more. With STEM (science, technology, engineering, and math) subjects ever more important in today's technological world, here is the perfect book to inspire and educate kids and prepare them

for the future. All core curriculum areas of science are covered, including physics, biology, chemistry, earth science, and space science.

Cosmos Vintage

Writing for Engineering and Science Students is a clear and practical guide for anyone undertaking either academic or technical writing. Drawing on the author's extensive experience of teaching students from different fields and cultures, and designed to be accessible to both international students and native speakers of English, this book: Employs analyses of hundreds of articles from engineering and science journals to explore all the distinctive characteristics of a research paper, including organization, length and naming of sections, and location and purpose of citations and graphics; Guides the student through university-level writing and beyond, covering lab reports, research proposals, dissertations, poster presentations, industry reports, emails, and job applications; Explains what to consider before and after undertaking academic or technical writing, including focusing on differences between genres in goal, audience, and criteria for acceptance and rewriting; Features tasks, hints, and tips for teachers and students at the end of each chapter, as well as accompanying eResources offering additional exercises and answer keys. With metaphors and anecdotes from the author's personal experience, as well as quotes from famous writers to make the text engaging and accessible, this book is essential reading for all students of science and engineering who are taking a course in writing or seeking a

resource to aid their writing assignments.

Up Against It St. Martin's Press

Since the publication of the bestselling first edition, there have been numerous advances in the field of nuclear science. In medicine, accelerator based teletherapy and electron-beam therapy have become standard. New demands in national security have stimulated major advances in nuclear instrumentation. An ideal introduction to the fundamentals of nuclear science and engineering, this book presents the basic nuclear science needed to understand and quantify an extensive range of nuclear phenomena. New to the Second Edition—A chapter on radiation detection by Douglas McGregor Up-to-date coverage of radiation hazards, reactor designs, and medical applications Flexible organization of material that allows for quick reference This edition also takes an in-depth look at particle accelerators, nuclear fusion reactions and devices, and nuclear technology in medical diagnostics and treatment. In addition, the author discusses applications such as the direct conversion of nuclear energy into electricity. The breadth of coverage is unparalleled, ranging from the theory and design characteristics of nuclear reactors to the identification of biological risks associated with ionizing radiation. All topics are supplemented with extensive nuclear data compilations to perform a wealth of calculations. Providing extensive coverage of physics, nuclear science, and nuclear technology of all types, this up-to-date second edition of *Fundamentals of Nuclear Science and Engineering* is a key reference for any physicist or engineer.

Cloud Computing for Science and Engineering Routledge

A SCIENTIFIC APPROACH TO WRITING Technical ideas may be solid or even groundbreaking, but if these ideas cannot be clearly communicated, reviewers of technical documents—e.g., proposals for research funding, articles submitted to scientific journals, and business plans to commercialize technology—are likely to reject the argument for advancing these ideas. The problem is that many engineers and scientists, entirely comfortable with the logic and principles of mathematics and science, treat writing as if it possesses none of these attributes. The absence of a systematic framework for writing often results in sentences that are difficult to follow or arguments that leave reviewers scratching their heads. This book fixes that problem by presenting a “scientific” approach to writing that mirrors the sensibilities of scientists and engineers, an approach based on an easily-discernable set of principles. Rather than merely stating rules for English grammar and composition, this book explains the reasons behind these rules and shows that good reasons can guide every writing decision. This resource is also well suited

for the growing number of scientists and engineers in the U.S. and elsewhere who speak English as a second language, as well as for anyone else who just wants to be understood.

Practical Programming in Tcl and Tk Princeton University Press

Scientific Writing in Engineering helps scientists, engineers, and students of all academic levels efficiently write scientific texts, such as scientific articles, conference papers, theses, reports, and research proposals.

Drawing from long-time experience in academic teaching, the authors walk the readers through scientific writing step by step all the way from a blank first page to complete manuscripts. A comprehensive list of concise recommendations and more than one hundred examples, taken from real-life scientific texts, offer readers the chance to draw easy analogies between own scientific texts and the examples provided in this book. The elaborate recommendations, with emphasis on specific characteristics of writing in engineering sciences, serve as complete self-study material that renders the book a practical guide to effective scientific writing. Readers will enhance their knowledge on scientific text structuring and will learn to avoid pitfalls in use of English, including grammatical and syntactical phenomena. Readers are given the opportunity to handle non-textual elements in scientific writing, such as figures and mathematical equations and formulas. Finally, the book provides

detailed discussions on citing and referencing along with recommendations on formal electronic correspondence.

The Art of Insight in Science and Engineering Crown

Explore engineering as a career with this introduction for ages 12 to 16 The job of an engineer is to solve all sorts of complex challenges facing the world while improving our lives through creative, innovative ideas. This engineering book for teens gives you a look into what engineers do and how they drive society forward through math and science. From designing tablets and smartphones to reimagining the way we collect and store renewable energy, this engineering book for teens introduces you to the major engineering disciplines and their distinct specialties, famous engineers throughout history, and more. Engineering for Teens offers: Engineering fundamentals—Discover the four main branches of engineering and their different specialties. Inspired inventions—Get examples of the incredible things that engineers have created, like fuel cells and medicines. Inclusivity in engineering—Learn all about the diversity within the field of engineering. Discover the wonders of engineering and prepare yourself for a life of scientific discovery with this engineering book for teens.

Software Engineering for Science Routledge

Science/Engineering "Petroski has an inquisitive mind, and he is a fine writer. . . [He] takes us on a lively tour of engineers, their creations and their necessary turns of mind." --Los Angeles Times From the Ferris wheel to the integrated circuit, feats of engineering have changed our environment in countless ways, big and small. In Remaking the World: Adventures in

Engineering, Duke University's Henry Petroski focuses on the big: Malaysia's 1,482-foot Petronas Towers as well as the Panama Canal, a cut through the continental divide that required the excavation of 311 million cubic yards of earth. *Remaking the World* tells the stories behind the man-made wonders of the world, from squabbles over the naming of the Hoover Dam to the effects the Titanic disaster had on the engineering community of 1912. Here, too, are the stories of the personalities behind the wonders, from the jaunty Isambard Kingdom Brunel, designer of nineteenth-century transatlantic steamships, to Charles Steinmetz, oddball genius of the General Electric Company, whose office of preference was a battered twelve-foot canoe. Spirited and absorbing, *Remaking the World* is a celebration of the creative instinct and of the men and women whose inspirations have immeasurably improved our world. "Petroski [is] America's poet laureate of technology. . . . *Remaking the World* is another fine book." --Houston Chronicle "Remaking the World really is an adventure in engineering." --San Diego Union-Tribune

Science and Engineering Careers in the United States CRC Press

Beginning in the early 2000s, there was an upsurge of national concern over the state of the science and engineering job market that sparked a plethora of studies, commission reports, and a presidential initiative, all stressing the importance of maintaining American competitiveness in these fields. *Science and Engineering Careers in the United States* is the first major academic study to probe the issues that underlie these concerns. This volume provides new

information on the economics of the postgraduate science and engineering job market, addressing such topics as the factors that determine the supply of PhDs, the career paths they follow after graduation, and the creation and use of knowledge as it is reflected by the amount of papers and patents produced. A distinguished team of contributors also explores the tensions between industry and academe in recruiting graduates, the influx of foreign-born doctorates, and the success of female doctorates. *Science and Engineering Careers in the United States* will raise new questions about stimulating innovation and growth in the American economy.

Fundamentals of Nuclear Science and Engineering Second Edition Basic Books
RETURNING TO TELEVISION AS AN ALL-NEW MINISERIES ON FOX *Cosmos* is one of the bestselling science books of all time. In clear-eyed prose, Sagan reveals a jewel-like blue world inhabited by a life form that is just beginning to discover its own identity and to venture into the vast ocean of space. Featuring a new Introduction by Sagan's collaborator, Ann Druyan, full color illustrations, and a new Foreword by astrophysicist Neil deGrasse Tyson, *Cosmos* retraces the fourteen billion years of cosmic evolution that have transformed matter into consciousness, exploring such topics as the origin of life, the human brain, Egyptian hieroglyphics, spacecraft missions, the death of the Sun, the evolution of galaxies, and the forces and individuals who helped to shape modern science. Praise for *Cosmos* "Magnificent . . . With a lyrical literary style, and a range that touches almost all aspects of human knowledge, *Cosmos* often seems too good to be true."—The Plain Dealer "Sagan is an astronomer with one eye on the stars, another on history, and a third—his mind's—on the human condition."—Newsday "Brilliant in its scope and provocative in its suggestions . . .

shimmers with a sense of wonder.”—The Miami Herald “Sagan dazzles the mind with the miracle of our survival, framed by the stately galaxies of space.”—Cosmopolitan “Enticing . . . iridescent . . . imaginatively illustrated.”—The New York Times Book Review

Science and Engineering of Small Arms
CRC Press

This book initiates with the story of the evolution of firearms to enable the reader to appreciate the sequence of the development of firearms. It discusses different classes of small arms, their mechanics, internal and external ballistics. Further, it covers the design idea of barrels and actions, various operating principles and relevant discussion on ammunition and propellants. The principle of quality in the design of the small arms is also elaborated in the desired degree. The book brings out the relevance of modern manufacturing technologies like MIM and various surface treatments, and polymers for enhancement of product quality. To appreciate the sophistication of the architecture, the book presents the anatomical details of a few small arms of repute. Provides complete understanding of overall small weapon systems Explores mechanics and physics of small arms Discusses proper design, quality control, and manufacturing process selections for a good weapon Covers common type of weapon failures and catastrophic failure Includes relevance of manufacturing processes The book is aimed at professionals and graduate students in Mechanical Design, Armament Design, Gun Design including personnel in the

military, paramilitary, police, and all other armed forces and their maintenance crews.

ABCs of Engineering Newnes

One man must stop starship hijackers from using an unusual starship to plunder a wealthy colony. Onboard, light moves so slowly you can see its passage, Flip a light switch and see the room slowly fill with light. Run fast, and the view ahead shifts into blue, and you can create sonic booms. Nebula Award nominee.

The Way Things Work Now Penguin

Tools to make hard problems easier to solve. In this book, Sanjoy Mahajan shows us that the way to master complexity is through insight rather than precision. Precision can overwhelm us with information, whereas insight connects seemingly disparate pieces of information into a simple picture. Unlike computers, humans depend on insight. Based on the author's fifteen years of teaching at MIT, Cambridge University, and Olin College, *The Art of Insight in Science and Engineering* shows us how to build insight and find understanding, giving readers tools to help them solve any problem in science and engineering. To master complexity, we can organize it or discard it. *The Art of Insight in Science and Engineering* first teaches the tools for organizing complexity, then distinguishes the two paths for discarding complexity: with and without loss of information. Questions and problems throughout the text help readers master and apply these groups of tools. Armed with this three-part toolchest, and without complicated mathematics, readers can estimate the flight range of birds and planes and the strength of chemical bonds, understand the physics of pianos and xylophones, and explain why skies are blue and sunsets are red. *The Art of Insight in Science and Engineering* will appear in print and online under a Creative Commons Noncommercial Share Alike license.

The Heart of Science Sourcebooks,

Inc.

Software Engineering for Science provides an in-depth collection of peer-reviewed chapters that describe experiences with applying software engineering practices to the development of scientific software. It provides a better understanding of how software engineering is and should be practiced, and which software engineering practices are effective for scientific software. The book starts with a detailed overview of the Scientific Software Lifecycle, and a general overview of the scientific software development process. It highlights key issues commonly arising during scientific software development, as well as solutions to these problems. The second part of the book provides examples of the use of testing in scientific software development, including key issues and challenges. The chapters then describe solutions and case studies aimed at applying testing to scientific software development efforts. The final part of the book provides examples of applying software engineering techniques to scientific software, including not only computational modeling, but also software for data management and analysis. The authors describe their experiences and lessons learned from developing complex scientific software in different domains. About the Editors Jeffrey Carver is an Associate Professor in the Department of Computer Science at the University of Alabama. He is one of the primary organizers of the workshop series on Software Engineering for Science ([http://](http://www.SE4Science.org/workshops)

www.SE4Science.org/workshops). Neil P. Chue Hong is Director of the Software Sustainability Institute at the University of Edinburgh. His research interests include barriers and incentives in research software ecosystems and the role of software as a research object. George K. Thiruvathukal is Professor of Computer Science at Loyola University Chicago and Visiting Faculty at Argonne National Laboratory. His current research is focused on software metrics in open source mathematical and scientific software.

Picturing Science and Engineering MIT Press 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.

[An Introduction to Python Programming for Scientists and Engineers](#) Routledge

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 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.

The MIT Guide to Science and Engineering Communication, second edition Del Rey

From the smallest gnat to the largest aircraft, all things that fly obey the same aerodynamic principles. The Simple Science of Flight offers a leisurely introduction to the mechanics of flight and, beyond that, to the scientific

attitude that finds wonder in simple calculations, forging connections between, say, the energy efficiency of a peanut butter sandwich that fuels your body and that of the kerosene that fuels a jumbo jet. It is the product of a lifetime of watching and investigating the way flight happens. He covers paper airplanes, kites, gliders, and human-powered flying machines as well as birds and insects, explaining difficult concepts like lift, drag, wing loading, and cruising speed through many fascinating comparisons, anecdotes, and examples. Equations, often the best shorthand to explain and connect phenomena, are integrated seamlessly into the flow of the text in such a way that even math-phobic readers should not be put off. Tennekes begins with a simple comparison of the relative fuel consumption of hummingbirds, cars, and airplanes, then turns to the relations between an airplane's weight, its wing area, and its cruising speed. After showing that it is possible to collect data on all flying creatures and flying machines in a single "Great Flight Diagram", he looks at energetics through the considerable efforts of a little 35-gram bird in a wind tunnel. There are stories on the effects of headwinds, tailwinds, and weather conditions on both birds and planes, on the elegance of the mechanics that makes flight possible, and on the aerodynamics of sophisticated flying toys.

Research and Technical Writing for Science and Engineering Cambridge University Press

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.

How to Be Good at Science, Technology, and Engineering CRC Press

From acoustics to holograms—explore awesome engineering facts for kids ages 8 to 12 Did you know that computer chips can be thousands of times smaller than a grain of sand? Or that whale fins inspired the wind turbine? The Fascinating Engineering Book for Kids is packed with 500 incredible facts about every branch of engineering with full-color pictures to match! Kids (and adults) will learn about some of the most famous and influential engineers in history, and explore how engineers helped build so many of the amazing things in our world, from underwater machines to spaceships and satellites! Dig into the best in kids' engineering books with fascinating trivia like: The Ancient Theatre of Epidauros is an amphitheater in Greece built in the fourth century. It was designed so well that it is still used today! GloFish are genetically engineered to enhance their luminescence—a glow that can be seen under ultraviolet lights. Robotic engineers can work in animatronics where they design and build robots for entertainment, like the ones you see in theme parks. Inspire curiosity and a lifelong love of science with this mind-boggling book of engineering for kids.

Engineering Science Stripe Press

Help your child master Grade 2 to 5 STEM subjects and become a science superstar! From learning how the heart works to understanding what evolution is, this fully illustrated home learning workbook makes grasping science, technology and engineering as easy as ABC. This engaging science book for kids makes tricky topics and challenging concepts completely crystal clear! Here's what's inside: • Covers the core STEM topics for grades 2-5, from biology, chemistry and physics to technology. • Clearly laid out with easy-to-follow instructions for children

to use by themselves. • Answers are given at the back of the book. • Practice questions and practical exercises to help expand your child's knowledge of the subject. Inspire your child with science Did you know that the human skeleton is made up of 206 bones? Or that the Earth's human population has quadrupled in the last hundred years? Packed with fascinating facts, fun graphics and step-by-step explanations, this brilliant visual workbook will keep budding scientists and engineers engaged. It helps kids understand what they've learned in school and gives them extra science revision practice before an important test. Perfect for children ages 7-11, this colorful science practice book covers all the key areas of the school curriculum for this level. It includes the human body, animal and plant life, evolution, states of matter, energy, simple mechanics, the Earth, Moon and Sun, and lots more. And there are answers at the back to check that you're on the right path. This engaging and clear science workbook accompanies How to be Good at Science, Technology, and Engineering Grade 5-8 which covers ages 11-14 (Grades 5, 6, 7 and 8). Discover How to be Good in other subjects DK's successful How to be Good at... workbook series provides your child with the tools to learn how to look at the world around them and figure out how it works. There are more books to discover! Learn everything they need to know about math through eye-catching illustrations and easy-to-follow instructions with How to Be Good at Math.

The Fascinating Engineering Book for Kids

Cambridge University Press
Fully updated, this edition includes new chapters on energy storage, off-grid systems and microgrids; revised coverage of wind, hydro, photovoltaic, solar thermal, marine and bioenergy;

and online exercises, datasets and solutions for instructors. Quantitative, accessible and ideal for senior and graduate students across all STEM backgrounds.