

Best Books Science Engineering

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30-Second Engineering Penguin

Providing unique, accessible lessons on engineering, this title in the bestselling 101 Things I Learned® series is a perfect resource for students, recent graduates, general readers, and even seasoned professionals. An experienced civil engineer presents the physics and fundamentals underlying the many fields of engineering. Far from a dry, nuts-and-bolts exposition, 101 Things I Learned® in Engineering School uses real-world examples to show how the engineer's way of thinking can illuminate questions from the simple to the profound: Why shouldn't soldiers march across a bridge? Why do buildings want to float and cars want to fly? What is the difference between thinking systemically and thinking systematically? This informative resource will appeal to students, general readers, and even experienced engineers, who will discover within many provocative insights into familiar principles.

Pocket Book of Technical Writing for Engineers and Scientists MIT Press

An introduction to computer engineering for babies. Learn basic logic gates with hands on examples of buttons and an output LED.

How to Be Good at Science, Technology, and Engineering Princeton University Press

A groundbreaking treatise by one of the great mathematicians of our time, who argues that highly effective thinking can be learned. What spurs on and inspires a great idea? Can we train ourselves to think in a way that will enable world-changing understandings and insights to emerge? Richard Hamming said we can, and first inspired a generation of engineers, scientists, and researchers in 1986 with "You and Your Research," an electrifying sermon on why some scientists do great work, why most don't, why he did, and why you should, too. The Art of Doing Science and

Engineering is the full expression of what "You and Your Research" outlined. It's a book about thinking; more specifically, a style of thinking by which great ideas are conceived. The book is filled with stories of great people performing mighty deeds – – but they are not meant to simply be admired. Instead, they are to be aspired to, learned from, and surpassed. Hamming consistently returns to Shannon's information theory, Einstein's relativity, Grace Hopper's work on high-level programming, Kaiser's work on digital fillers, and his own error-correcting codes. He also recounts a number of his spectacular failures as clear examples of what to avoid. Originally published in 1996 and adapted from a course that Hamming taught at the U.S. Naval Postgraduate School, this edition includes an all-new foreword by designer, engineer, and founder of Dynamicland Bret Victor, and more than 70 redrawn graphs and charts. The Art of Doing Science and Engineering is a reminder that a childlike capacity for learning and creativity are accessible to everyone. Hamming was as much a teacher as a scientist, and having spent a lifetime forming and confirming a theory of great people, he prepares the next generation for even greater greatness.

Picturing Science and Engineering Naval Institute Press

Materials Science and Engineering: An Introduction promotes student understanding of the three primary types of materials (metals, ceramics, and polymers) and composites, as well as the relationships that exist between the structural elements of materials and their properties. The 10th edition provides new or updated coverage on a number of topics, including: the Materials Paradigm and Materials Selection Charts, 3D printing and additive manufacturing, biomaterials, recycling issues and the Hall effect.

Engineering a Better Future Princeton University Press

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.

The MIT Guide to Science and Engineering

Communication, second edition MIT Press (MA)

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 *Remaking the World* Springer

The focus of this text is to teach engineering students the skill of technical writing. It takes a project oriented approach and covers writing functions that are of particular use to the engineering student. This book is part of the B.E.S.T. Series.

Project Azorian Cambridge University Press

This book is about the role of some engineering principles in our everyday lives. Engineers study these principles and use them in the design and analysis of the products and systems with which they work. The same principles play basic and influential roles in our everyday lives as well. Whether the concept of entropy, the moments of inertia, the natural frequency, the Coriolis acceleration, or the electromotive force, the roles and effects of these phenomena are the same in a system designed by an engineer or created by nature. This shows that learning about these engineering concepts helps us to understand why certain things happen or behave the way they do, and that these concepts are not strange phenomena invented by individuals only for their own use, rather, they are part of our everyday physical and natural world, but are used to our benefit by the engineers and scientists. Learning about these principles might also help attract more and more qualified and interested high school and college students to the engineering fields. Each chapter of this book explains one of these principles through examples, discussions, and at times, simple equations.

101 Things I Learned® in Engineering School Springer

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.

A Scientific Approach to Writing for Engineers and Scientists MIT Press

Sustainability applied to networking is about treating professional support and assistance like a resource, and creating more of it than you take. Written for an international STEM audience, Sustainable Networking for Scientists and Engineers discusses how to create success and mutually beneficial professional relationships.

Practical Programming in Tcl and Tk Hachette+ORM

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

The Way Things Work Now Prentice Hall Professional

A textbook covering data-science and machine learning methods for modelling and control in engineering and science, with Python and

MATLAB®.

The Fascinating Engineering Book for Kids University of Chicago Press
Electronic Tubes|Semiconductor Devices|Diode Circuits|Amplifier Circuits|Oscillator Circuits|Thyristor Circuits|Ic And Operational Amplifiers|Logic Circuits And Number Systems|Electrical Instruments|Electronic Instruments|Transducers|Appendices(A) *Objectives of Engineering* Cambridge University Press

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.

Materials Science and Engineering Mit Press

Python Crash Course is a fast-paced, thorough introduction to Python that will have you writing programs, solving problems, and making things that work in no time. In the first half of the book, you'll learn about basic programming concepts, such as lists, dictionaries, classes, and loops, and practice writing clean and readable code with exercises for each topic. You'll also learn how to make your programs interactive and how to test your code safely before adding it to a project. In the second half of the book, you'll put your new knowledge into practice with three substantial projects: a Space Invaders-inspired arcade game, data visualizations with Python's super-handly libraries, and a simple web app you can deploy online. As you work through Python Crash Course you'll learn how to: –Use powerful Python libraries and tools, including matplotlib, NumPy, and Pygal –Make 2D games that respond to keypresses and mouse clicks, and that grow more difficult as the game progresses –Work with data to generate interactive visualizations –Create and

customize Web apps and deploy them safely online –Deal with mistakes and errors so you can solve your own programming problems If you’ve been thinking seriously about digging into programming, Python Crash Course will get you up to speed and have you writing real programs fast. Why wait any longer? Start your engines and code! Uses Python 2 and 3

Data-Driven Science and Engineering McGraw-Hill Professional Publishing

“Though ours is an age of high technology, the essence of what engineering is and what engineers do is not common knowledge. Even the most elementary of principles upon which great bridges, jumbo jets, or super computers are built are alien concepts to many. This is so in part because engineering as a human endeavor is not yet integrated into our culture and intellectual tradition. And while educators are currently wrestling with the problem of introducing technology into conventional academic curricula, thus better preparing today’s students for life in a world increasingly technological, there is as yet no consensus as to how technological literacy can best be achieved. " I believe, and I argue in this essay, that the ideas of engineering are in fact in our bones and part of our human nature and experience. Furthermore, I believe that an understanding and an appreciation of engineers and engineering can be gotten without an engineering or technical education. Thus I hope that the technologically uninitiated will come to read what I have written as an introduction to technology. Indeed, this book is my answer to the questions 'What is engineering?' and 'What do engineers do?'" - Henry Petroski, *To Engineer is Human*

To Engineer is Human MIT 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 Epidaurus 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.

Science for Engineering Penguin UK

A second edition of a popular guide to scientific and technical communication, updated to reflect recent changes in computer technology. This guide covers the basics of scientific and engineering communication, including defining an audience, working with

collaborators, searching the literature, organizing and drafting documents, developing graphics, and documenting sources. The documents covered include memos, letters, proposals, progress reports, other types of reports, journal articles, oral presentations, instructions, and CVs and resumes. Throughout, the authors provide realistic examples from actual documents and situations. The materials, drawn from the authors' experience teaching scientific and technical communication, bridge the gap between the university novice and the seasoned professional. In the five years since the first edition was published, communication practices have been transformed by computer technology. Today, most correspondence is transmitted electronically, proposals are submitted online, reports are distributed to clients through intranets, journal articles are written for electronic transmission, and conference presentations are posted on the Web. Every chapter of the book reflects these changes. The second edition also includes a compact Handbook of Style and Usage that provides guidelines for sentence and paragraph structure, punctuation, and usage and presents many examples of strategies for improved style.

Handbook of Chemical Engineering Calculations Stripe Press

Textbook that uses examples and Jupyter notebooks from across the sciences and engineering to teach Python programming.

Structures McGraw-Hill Science, Engineering & Mathematics

In early August 1974, despite incredible risks and after six years of secret preparations, the CIA attempted to salvage the sunken Soviet ballistic missile submarine K-129 from the depths of the North Pacific Ocean. The audacious effort was undertaken with the cover of an undersea mining operation sponsored by eccentric billionaire Howard Hughes. “Azorian”—incorrectly identified as Project Jennifer by the press—was the most ambitious ocean engineering endeavor attempted by man. Following the accidental sinking of a Soviet missile submarine in March 1968, U.S. intelligence agencies were able to determine the precise location and to develop a means of raising the submarine from a depth of 16,400 feet. The remarkable salvage effort of the K-129, which contained nuclear-armed torpedoes and one nuclear tipped missile as well as crypto equipment, was conducted with Soviet naval ships a few hundred yards from the lift ship, the Hughes Glomar Explorer. The book is based, in part, on the research for Michael White’ documentary film *Azorian: The Raising of the K-129*, released in late 2009. The research for the book and the documentary forced the CIA to issue a brief report on Project Azorian in early 2010, with one-third of the document redacted.