
C For Engineers And Scientists

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Discovering Modern C++ Springer Science & Business Media
With C++ gaining a stronghold in the engineering and scientific communities, Bronson's book makes C++ accessible to first level engineering students. Featuring a wealth of practical, engineering-oriented examples and applications, the book teaches the fundamentals of the C++ language with a gradual refinement of programming skills from a procedural to an object orientation. Part One presents procedural programming with an emphasis on modular program design, and helps readers understand the importance of writing programs that can be easily modified and maintained. Part Two on object-oriented programming and Part Three on data structures are interchangeable for teaching flexibility. Problem solving techniques, software engineering, and completed applications are

emphasized throughout.

Software Design for Engineers and Scientists
Jones & Bartlett Publishers

A groundbreaking treatise by one of the great mathematicians of our age, who outlines a style of thinking by which great ideas are conceived. What inspires and spurs on 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. He 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 can—and 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 simply to be admired. Instead, they are to be aspired to, learned from, and surpassed. Hamming consistently returns to Shannon's information theory, Einstein's theory of relativity, Grace Hopper's work on high-level programming, Kaiser's work on digital filters, and his own work on 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 US Naval Postgraduate School, this edition includes an all-new foreword by designer, engineer, and founder of Dynamicland Bret Victor, plus more than 70 redrawn graphs and charts. The Art of Doing Science and Engineering is a reminder that a 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 and great ideas, he prepares the next generation for even greater distinction.

A Framework for K-12 Science Education Bloomsbury Publishing USA

C is a favored and widely used programming language, particularly within the fields of science and engineering. C Programming for Scientists and Engineers with Applications guides readers through the fundamental, as well as the advanced concepts, of the C programming language as it applies to solving engineering and scientific problems. Ideal for readers with no prior programming experience, this text provides numerous sample problems and their solutions in the areas of mechanical engineering, electrical engineering, heat transfer, fluid mechanics, physics, chemistry, and more. It begins with a chapter focused on the basic terminology relating to hardware, software, problem definition and solution. From there readers are quickly brought into the key elements of C and will be writing their own code upon completion of Chapter 2. Concepts are then gradually built upon using a strong, structured approach with syntax and semantics presented in an easy-to-understand sentence format. Readers will find C Programming for Scientists and Engineers with Applications to be an engaging, user-friendly introduction to this popular language.

C Programming for Scientists & Engineers Elsevier

Software Design for Engineers and Scientists integrates three core areas of computing: Software engineering - including both traditional methods and the insights of 'extreme programming'. Program design - including the analysis of data structures and algorithms. Practical object-oriented programming Without assuming prior knowledge of any particular programming language, and avoiding the need for students to learn from separate, specialised Computer Science texts, John

Robinson takes the reader from small-scale programming to competence in large software projects, all within one volume. Copious examples and case studies are provided in C++. The book is especially suitable for undergraduates in the natural sciences and all branches of engineering who have some knowledge of computing basics, and now need to understand and apply software design to tasks like data analysis, simulation, signal processing or visualisation. John Robinson introduces both software theory and its application to problem solving using a range of design principles, applied to the creation of medium-sized systems, providing key methods and tools for designing reliable, efficient, maintainable programs. The case studies are presented within scientific contexts to illustrate all aspects of the design process, allowing students to relate theory to real-world applications. - Core computing topics - usually found in separate specialised texts - presented to meet the specific requirements of science and engineering students - Demonstrates good practice through applications, case studies and worked examples based in real-world contexts

Engineering a Better Future Elsevier

The growth of the environmental sciences has greatly expanded the scope of biological disciplines today's engineers have to deal with. Yet, despite its fundamental importance, the full breadth of biology has been given short shrift in most environmental engineering and science courses. Filling this gap in the professional literature, Environmental Biology for Engineers and Scientists introduces students of chemistry, physics, geology, and environmental engineering to a broad range of biological concepts they may not otherwise be exposed to in their training. Based on a graduate-level course designed to teach engineers to be literate in biological concepts and

terminology, the text covers a wide range of biology without making it tedious for non-biology majors. Teaching aids include: * Notes, problems, and solutions * Problem sets at the end of each chapter * PowerPoints (r) of many figures A valuable addition to any civil engineering and environmental studies curriculum, this book also serves as an important professional reference for practicing environmental professionals who need to understand the biological impacts of pollution.

The Boundary Element Method with Programming John Wiley & Sons

"This self-study text for practicing engineers and scientists explains the mathematical tools that are required for advanced technological applications, but are often not covered in undergraduate school. The authors (University of Central Florida) describe special functions, matrix methods, vector operations, the transformation laws of tensors, the analytic functions of a complex variable, integral transforms, partial differential equations, probability theory, and random processes. The book could also serve as a supplemental graduate text." -- Memento.

C for Engineers Butterworth-Heinemann

This book focuses on systematic software design approach in C for applications in engineering and science following the latest standard developed by the ANSI C/ISO C Standard Committees called C99.

Machine Learning Butterworth-Heinemann

This standard handbook for engineers covers the fundamentals, theory and applications of radio, electronics, computers, and communications equipment. It

provides information on essential, need-to-know topics without heavy emphasis on complicated mathematics. It is a "must-have" for every engineer who requires electrical, electronics, and communications data. Featured in this updated version is coverage on intellectual property and patents, probability and design, antennas, power electronics, rectifiers, power supplies, and properties of materials. Useful information on units, constants and conversion factors, active filter design, antennas, integrated circuits, surface acoustic wave design, and digital signal processing is also included. This work also offers new knowledge in the fields of satellite technology, space communication, microwave science, telecommunication, global positioning systems, frequency data, and radar.

ESSENTIAL JAVA FOR SCIENTISTS AND ENGINEERS

McGraw-Hill Science/Engineering/Math

The C language is often taught as a first programming language to engineers. This text provides a guide to C and contains examples and sample programmes which should be useful to engineering students.

C/C++ Mathematical Algorithms for Scientists & Engineers
Computing McGraw-Hill

Developed from the author's many years of teaching computing courses, *Programming in C++ for Engineering and Science* guides students in designing programs to solve real problems encountered in engineering and scientific applications. These problems include radioactive decay, pollution indexes, digital circuits, differential equations, Internet addr

Sustainability Science and Engineering Springer Science & Business Media

This engaging handbook gives students and working scientists and engineers the information literacy skills they need to find, evaluate, and use information. Beginning with a strong foundation in the utility, structure, and packaging of information, this useful handbook helps students and working professionals decode real-world information literacy problems. Mary DeJong provides a compelling context and rationale for the skills scientists and engineers need to succeed in challenging careers that rely on the successful discovering and sharing of complex information. Students will appreciate the in-depth information on sources, especially those needed for research assignments, and scientists and engineers who write for publication will benefit from chapters on searching databases and organizing and citing sources. Written with science and engineering students and professionals in mind, this book is thorough, well-paced, engaging, and even funny. *Information Literacy for Science and Engineering Students* Springer

Bronson's second edition makes C++ accessible to first-level engineering students. The book teaches the fundamentals of the C++ language with a gradual refinement of programming skills from procedural to object-oriented. Part One presents procedural programming with an emphasis on modular program design. Part Two, on object-oriented programming, and Part Three, on data structures, are interchangeable to allow for teaching flexibility. In addition, students are introduced to the fundamentals of software engineering with an emphasis on problem-solving techniques, making the text an ideal choice for both one- and two-semester C++ programming courses.

C for Engineers and Scientists Springer Science & Business Media

C for Engineers and Scientists is a complete and

authoritative introduction to computer programming in C, with introductions to object-oriented programming in C++, and graphical plotting and numerical computing in C/C++ interpreter Ch® and MATLAB® for applications in engineering and science. This book is designed to teach students how to solve engineering and science problems using C. It teaches beginners with no previous programming experience the underlying working principles of scientific computing and a disciplined approach for software development. All the major features of C89 and C99 are presented with numerous engineering application examples derived from production code. The book reveals the coding techniques used by the best C programmers and shows how experts solve problems in C. It is also an invaluable resource and reference book for seasoned programmers. C for Engineers and Scientists focuses on systematic software design approach in C for applications in engineering and science following the C99, the latest standard developed by the ANSI and ISO C Standard Committees which resolved many deficiencies of C89 for applications in engineering and science. The book includes a companion CD which contains the C/C++ interpreter Ch for use as an instructional tool as well as Visual C++ and gcc/g++ compilers to help teaching and learning of C and C++. Ch presents a pedagogically effective user-friendly interactive

computing environment for the simplest possible teaching/learning computer programming in C so that the students can focus on improving their program design and problem solving skills.

Environmental Biology for Engineers and Scientists
Butterworth-Heinemann

As scientific and engineering projects grow larger and more complex, it is increasingly likely that those projects will be written in C++. With embedded hardware growing more powerful, much of its software is moving to C++, too. Mastering C++ gives you strong skills for programming at nearly every level, from “close to the hardware” to the highest-level abstractions. In short, C++ is a language that scientific and technical practitioners need to know. Peter Gottschling’s Discovering Modern C++ is an intensive introduction that guides you smoothly to sophisticated approaches based on advanced features. Gottschling introduces key concepts using examples from many technical problem domains, drawing on his extensive experience training professionals and teaching C++ to students of physics, math, and engineering. This book is designed to help you get started rapidly and then master increasingly robust features, from lambdas to expression templates. You’ll also learn how to take advantage of the powerful libraries available to C++ programmers: both the Standard Template Library (STL) and scientific libraries for arithmetic, linear algebra, differential equations, and graphs. Throughout, Gottschling demonstrates how to write clear and expressive software using object orientation, generics, metaprogramming, and procedural techniques. By the time you’re finished, you’ll have mastered all the abstractions you need to write C++ programs with exceptional quality and performance.

HT THINK LIKE A COMPUTER SCIENCE Cambridge University Press

This thorough yet understandable introduction to the boundary element method presents an attractive alternative to the finite element method. It not only explains the theory but also presents the implementation of the theory into computer code, the code in FORTRAN 95 can be freely downloaded. The book also addresses the issue of efficiently using parallel processing hardware in order to considerably speed up the computations for large systems. The applications range from problems of heat and fluid flow to static and dynamic elasto-plastic problems in continuum mechanics.

Problem Solving and Computation for Scientists and Engineers Butterworth-Heinemann

Communications technologies increasingly pervade our everyday lives, yet the underlying principles are a mystery to most. Even among engineers and technicians, understanding of this complex subject remains limited. However, there is undeniably a growing need for all technology disciplines to gain intimate awareness of how their fields are affected by a more densely networked world. The computer science field in particular is profoundly affected by the growing dominance of communications, and computer scientists must increasingly engage with electrical engineering concepts. Yet communications technology is often perceived as a challenging subject with a steep learning curve. To address this need, the authors have transformed classroom-tested materials into this accessible textbook to give readers an

intimate understanding of fundamental communications concepts. Readers are introduced to the key essentials, and each selected topic is discussed in detail to promote mastery. Engineers and computer scientists will gain an understanding of concepts that can be readily applied to their respective fields, as well as provide the foundation for more advanced study of communications. Provides a thorough grounding in the basics by focusing on select key concepts Clarifies comprehension of the subject via detailed explanation and illustration Helps develop an intuitive sense of both digital and analog principles Introduces key broadcasting, wireless and wired systems Helps bridge the knowledge gap between software and electrical engineering Requires only basic calculus and trigonometry skills Classroom tested in undergraduate CS and EE programs Communications Engineering by Lee, Chiu, and Lin will give advanced undergraduates in computer science and beginning students of electrical engineering a rounded understanding of communications technologies. The book also serves as a key introduction to specialists in industry, or anyone who desires a working understanding of communications technologies.

Fortran 90/95 for Scientists and Engineers McGraw-Hill Science, Engineering & Mathematics Best-selling authors, Larry Nyhoff and Sanford

Leestma, bring you one of the first comprehensive Fortran 90 texts that features excellent engineering and science applications and programming problems. The authors, well-known for their clear, concise presentation style emphasize how Fortran 90 is used to solve problems. Their strong pedagogical approach teaches the basic steps in program development: problem analysis and specification, algorithm development, program coding, program execution and testing, and program maintenance.

The Art of Doing Science and Engineering John Wiley & Sons

This book is an easy, concise but fairly complete introduction to ISO/ANSI C++ with special emphasis on object-oriented numeric computation. A user-defined numeric linear algebra library accompanies the book and can be downloaded from the web.

Reference Data for Engineers CRC Press

This extensive library of computer programs-written in C language-allows readers to solve numerical problems in areas of linear algebra, ordinary and partial differential equations, optimization, parameter estimation, and special functions of mathematical physics. The library is based on NUMAL, the program assemblage developed and used at the Centre for Mathematics and Computer Science in Amsterdam, one of the world's leading research centers. The important characteristic of the library is its modular structure. Because it is highly compact, it is well-suited for use on personal computers. The library offers the expert a prodigious collection of procedures for implementing numerical methods. The novice can

experiment with the worked examples provided and use the more comprehensive procedures to perform mathematical computations. The library provides a powerful research tool for computer scientists, engineers, and applied mathematicians. Applicable materials can be downloaded from the CRC Press website.

Guide to Scientific Computing in C++ Samurai Media Limited

This text teaches the essentials of C programming, concentrating on what readers need to know in order to produce stand-alone programs and so solve typical scientific and engineering problems. It is a learning-by-doing book, with many examples and exercises, and lays a foundation of scientific programming concepts and techniques that will prove valuable for those who might eventually move on to another language. Written for undergraduates who are familiar with computers and typical applications but are new to programming.