Introduction To Octave For Engineers And Scientists

Familiarize yourself with Octave using this concise, practical tutorial that is focused on writing code to learn concepts. Starting from the basics, this book covers array-based computing, plotting, and working with files in Octave, which can run MATLAB files without modification. Introduction to Octave is useful for industry engineers, researchers, and students who are looking for open-source solutions for numerical computation. In this book you will learn by doing, avoiding technical jargon, which makes the concepts easy to learn. First you'll see how to run basic calculations, absorbing technical complexities incrementally as you progress toward advanced topics. Throughout, the language is kept simple to ensure that readers at all levels can grasp the concepts. What You'll Learn Apply sample code to your engineering or science problems Work with Octave arrays, functions, and loops Use Octave's plotting functions for data visualization Solve numerical computing and computational engineering problems with Octave Who This Book Is For Engineers, scientists, researchers, and students who are new to Octave. Some prior programming experience would be helpful but not required. This introduction to Scientific Computing illustrates

several numerical methods for the computer solution of certain classes of mathematical problems. The authors show how to compute the zeros or the integrals of continuous functions, solve linear systems, approximate functions by polynomials and construct accurate approximations for the solution of differential equations. To make the presentation concrete, the programming environment Matlab is adopted as a faithful companion.

All the design and development inspiration and direction an audio engineer needs in one blockbuster book! Douglas Self has selected the very best sound engineering design material from the Focal and Newnes portfolio and complied it into this volume. The result is a book covering the gamut of sound engineering. The material has been selected for its timelessness as well as for its relevance to contemporary sound engineering issues. * Hand picked content, provides everything you want to know in one volume * Proven best design practices * Case histories and design examples get you off and running on your current project

Designed for chemical engineering students and industry professionals, this book shows how to write reusable computer programs. Written in the three languages (C, C++, and MATLAB), it is accompanied by a CD-ROM featuring source code, executables, figures, and simulations. It also explains each program in detail.

Familiarize yourself with Scilab using this concise, practical tutorial that is focused on writing code to learn concepts. Starting from the basics, this book covers array-based computing, plotting, and working with files in Scilab. Introduction to Scilab is useful for industry engineers, researchers, and students who are looking for open-source solutions for numerical computation. In this book you will learn by doing, avoiding technical jargon, which makes the concepts easy to learn. First you'll see how to run basic calculations, absorbing technical complexities incrementally as you progress toward advanced topics. Throughout, the language is kept simple to ensure that readers at all levels can grasp the concepts. After reading this book, you will come away with sample code that can be re-purposed and applied to your own projects using Scilab. What You'll Learn Apply sample code to your engineering or science problems Work with Scilab arrays, functions, and loops Use Scilab's plotting functions for data visualization Solve numerical computing and computational engineering problems with Scilab Who This Book Is For Engineers, scientists, researchers, and students who are new to Scilab. Some prior programming experience would be helpful but not required.

This book presents endeavors to join synergies in order to create added value for society, using the latest scientific knowledge to boost technology

transfer from academia to industry. It potentiates the
foundations for the creation of knowledge- and
entrepreneurial cooperation networks involving
engineering, innovation, and entrepreneurship
stakeholders. The Regional HELIX 2018 conference
was organized at the University of Minho's School of
Engineering by the MEtRICs and Algoritmi Research
Centers, and took place in Guimarães, Portugal,
from June 27th to 29th, 2018. After a rigorous peer-
review process, 160 were accepted for publication,
covering a wide range of topics, including Control,
Automation and Robotics; Mechatronics Design,
Medical Devices and Wellbeing; Cyber-Physical
Systems, IoT and Industry 4.0; Innovations in
Industrial Context and Advanced Manufacturing;
New Trends in Mechanical Systems Development;
Advanced Materials and Innovative Applications;
Waste to Energy and Sustainable Environment;
Operational Research and Industrial Mathematics;
Innovation and Collaborative Arrangements;
Entrepreneurship and Internationalization; and
Oriented Education for Innovation, Engineering
and/or Entrepreneurship.
These are the proceedings of the 25th International
Conference on Domain Decomposition Methods in
Science and Engineering, which was held in St.
John's, Newfoundland, Canada in July 2018. Domain
decomposition methods are iterative methods for
solving the often very large systems of equations

that arise when engineering problems are discretized, frequently using finite elements or other modern techniques. These methods are specifically designed to make effective use of massively parallel, high-performance computing systems. The book presents both theoretical and computational advances in this domain, reflecting the state of art in 2018.

Chemical engineers face the challenge of learning the difficult concept and application of entropy and the 2nd Law of Thermodynamics. By following a visual approach and offering qualitative discussions of the role of molecular interactions, Koretsky helps them understand and visualize thermodynamics. Highlighted examples show how the material is applied in the real world. Expanded coverage includes biological content and examples, the Equation of State approach for both liquid and vapor phases in VLE, and the practical side of the 2nd Law. Engineers will then be able to use this resource as the basis for more advanced concepts.

Presents numerical methods for reservoir simulation, with efficient implementation and examples using widely-used online open-source code, for researchers, professionals and advanced students. This title is also available as Open Access on Cambridge Core.

"Building on his highly successful textbook on C++, David Yevick provides a concise yet comprehensive one-stop course in three key programming languages, C++, Java and Octave (a freeware alternative to MATLAB). Employing only

public-domain software to ensure straightforward implementation for all readers, this book presents a unique overview of numerical and programming techniques relevant to scientific programming, including object-oriented programming, elementary and advanced topics in numerical analysis, physical system modeling, scientific graphics, software engineering and performance issues. Relevant features of each programming language are illustrated with short, incisive examples, and the installation and application of the software is describedin detail. Compact, transparent code in all three programming languages is applied to the fundamental equations of quantum mechanics, electromagnetics, mechanics and statistical mechanics. Uncommented versions of the code that can be immediately modifiedand adapted are provided online for the more involved programs. This compact, practical text is an invaluable introduction for students in all undergraduate- and graduate-level courses in the physical sciences or engineering that require numerical modeling, and also a key reference for instructors and scientific programmers"--
This textbook provides materials for an introductory course in Engineering Acoustics for students with a basic knowledge of mathematics. The contents are based on extensive teaching experience at the graduate level. Each of the 14 main chapters deals with a well-defined topic and represents the material for a two-hour lecture. The chapters alternate between more theoretical and more application-oriented concepts. The presentation is organized to be suitable for self-study as well. For this third edition, the complete text and many figures have been revised. Several current amendments take account of advancements in the field. Further, a completely new chapter has been added which presents approaches and solutions to all assigned exercise problems. The new chapter offers the opportunity to explore

the underlying theoretical background in more detail. However, the study of the problems and their proposed solutions is no prerequisite for comprehending the material presented in the book's lecture part.

Get a quick start to learn, understand, and apply GNU Octave using a math- and programming-friendly approach. This book focuses on an end-to-end track to teach mathematical programming, data science, signal processing, and image processing with GNU Octave. GNU Octave by Example starts with an introduction to GNU Octave, a free and open-source alternative to MATLAB. Next, it explains the processes to install GNU Octave on popular operating systems such as Windows, Ubuntu, Raspberry Pi, and other platforms. Further, it covers hands-on exercises with GNU Octave exploring the basic functionality and command line in interactive mode. This is followed by covering matrices and various operations including how to read and analyze data from various sources. Moving forward, it introduces commonly used programming constructs in data visualization. It explains 2D and 3D data visualization along with data analysis. It also demonstrates the concepts related to geometry and its application with GNU Octave. It concludes with coverage of signal processing followed by image, video, and audio processing techniques. After reading this book, you will be able to write your own programs for scientific and numerical applications. What You Will Learn ? Understand the practical aspects of GNU Octave with math and programming-friendly abstractions ? Install GNU Octave on multiple platforms including Windows, Raspberry Pi, and Ubuntu ? Work with GNU Octave using the GUI, the command line, and Jupyter notebooks ? Implement 2D and 3D data visualization and analysis with GNU Octave Who This Book Is For Software engineers, data engineers, data science enthusiasts, and computer vision professionals. Comprehensive textbook which introduces the fundamentals

of aerospace engineering with a flight test perspective Introduction to Aerospace Engineering with a Flight Test Perspective is an introductory level text in aerospace engineering with a unique flight test perspective. Flight test, where dreams of aircraft and space vehicles actually take to the sky, is the bottom line in the application of aerospace engineering theories and principles. Designing and flying the real machines are often the reasons that these theories and principles were developed. This book provides a solid foundation in many of the fundamentals of aerospace engineering, while illuminating many aspects of real-world flight. Fundamental aerospace engineering subjects that are covered include aerodynamics, propulsion, performance, and stability and control. Key features: Covers aerodynamics, propulsion, performance, and stability and control. Includes self-contained sections on ground and flight test techniques. Includes worked example problems and homework problems. Suitable for introductory courses on Aerospace Engineering. Excellent resource for courses on flight testing. Introduction to Aerospace Engineering with a Flight Test Perspective is essential reading for undergraduate and graduate students in aerospace engineering, as well as practitioners in industry. It is an exciting and illuminating read for the aviation enthusiast seeking deeper understanding of flying machines and flight test.

Learn Two Popular Programming Languages in a Single Volume Widely used by scientists and engineers, well-established MATLAB® and open-source Octave are similar software programs providing excellent capabilities for data analysis, visualization, and more. By means of straightforward explanations and examples from different areas in mathematics, engineering, finance, and physics, Essential MATLAB and Octave explains how MATLAB and Octave are powerful tools applicable to a variety of problems. This text

provides an introduction that reveals basic structures and syntax, demonstrates the use of functions and procedures, outlines availability in various platforms, and highlights the most important elements for both programs. Effectively Implement Models and Prototypes Using Computational Models This text requires no prior knowledge. Self-contained, it allows the reader to use the material whenever needed rather than follow a particular order. Compatible with both languages, the book material incorporates commands and structures that allow the reader to gain a greater awareness of MATLAB and Octave, write their own code, and implement their scripts and programs within a variety of applicable fields. It is always made clear when particular examples apply only to MATLAB or only to Octave, allowing the book to be used flexibly depending on readers' requirements. Includes brief, simple code that works in both MATLAB and Octave Provides exercise sections at the end of each chapter Introduces framed examples and discussions with a scientific twist Exercises are provided at the end of each chapter Essential MATLAB and Octave offers an introductory course in MATLAB and Octave programming and is an authoritative resource for students in physics, mathematics, statistics, engineering, and any other subjects that require the use of computers to solve numerical problems.

Sound System Engineering Third Edition is a complete revision and expansion of the former work. Written by two leading authorities in the field of audio engineering, this highly respected guide covers the fundamentals necessary for the understanding of today's systems as well as for those systems yet to come. The space formerly occupied by outdated photographs of manufacturers' product and of older system installations has now been filled with new measurements and discussions of the measurement process. The "Mathematics for Audio chapter has been expanded to

include the mathematics of phasors. The "Interfacing Electrical and Acoustic Systems chapter has a completely new section covering the analysis of alternating current circuits. Additionally, system gain structure is now treated by both the available input power method and the voltage only method, complete with illustrations of each. All chapters dealing with loudspeaker directivity and coverage, the acoustic environment, room acoustics, speech intelligibility, and acoustic gain appear in up to date versions. In addition there is new material on signal delay and synchronization and equalization. There are completely new chapters on microphones, loudspeakers and loudspeaker arrays including line arrays with steering and beam-width control, and signal processing, both analog and digital. The book runs the gamut of sound system design from the simplest all-analog paging system to the largest multipurpose digital systems. In writing this third edition, the authors kept in mind the needs of sound system installers, sound system service technicians, and sound system designers. All three groups will find the material to be useful for everyday work as well as beneficial in the furtherance of their overall audio education.

From driverless cars to vehicular networks, recent technological advances are being employed to increase road safety and improve driver satisfaction. As with any newly developed technology, researchers must take care to address all concerns, limitations, and dangers before widespread public adoption. Transportation Systems and Engineering: Concepts, Methodologies, Tools, and Applications addresses current trends in transportation technologies, such as smart cars, green technologies, and infrastructure development. This multivolume book is a critical reference source for engineers, computer scientists, transportation authorities, students, and practitioners in the field of transportation systems management.

An easy to understand guide covering key principles of mathematical modelling and simulation in chemical engineering.

The congress's unique structure represents the two dimensions of technology and medicine: 13 themes on science and medical technologies intersect with five challenging main topics of medicine to create a maximum of synergy and integration of aspects on research, development and application. Each of the congress themes was chaired by two leading experts. The themes address specific topics of medicine and technology that provide multiple and excellent opportunities for exchanges.

Octave is open source equivalent for basic MATLAB package. Its usage in scientific and numerical computation is gaining popularity day by day. It can run MATLAB files without modifications. Present book gives introduction to Octave for a new-user. Starting from very basic, it goes on to explain array based computing, plotting and working with files. The book is useful for students, researchers and students who are looking for a open source software for numerical computation. It is written in a very concise format where learn-by-doing methodology is adopted so that new user can start developing quickly. CHAPTERS: 1 - Introduction to octave, 2- Interactive Octave Sessions, 3- Working with Arrays, 4-Plotting, 5 - Data through file reading and writing, 6- Functions and loops, 7- Numerical computing formalism

Long considered the only book an audio engineer needs on their shelf, Sound System Engineering provides an accurate, complete and concise tool for all those involved in sound system engineering. Fully updated on the design, implementation and testing of sound reinforcement systems this great reference is a necessary addition to any audio engineering library. Packed with revised material, numerous

illustrations and useful appendices, this is a concentrated capsule of knowledge and industry standard that runs the complete range of sound system design from the simplest all-analog paging systems to the largest multipurpose digital systems.

The field of chemical engineering is in constant evolution, and access to information technology is changing the way chemical engineering problems are addressed. Inspired by the need for a user-friendly chemical engineering text that demonstrates the real-world applicability of different computer programs, Introduction to Software for Chemical Engineers acquaints readers with the capabilities of various general purpose, mathematical, process modeling and simulation, optimization, and specialized software packages, while explaining how to use the software to solve typical problems in fluid mechanics, heat and mass transfer, mass and energy balances, unit operations, reactor engineering, and process and equipment design and control. Employing nitric acid production, methanol and ammonia recycle loops, and SO2 oxidation reactor case studies and other practical examples, Introduction to Software for Chemical Engineers shows how computer packages such as Excel, MATLAB®, Mathcad, CHEMCAD, Aspen HYSYS®, gPROMS, CFD, DEM, GAMS, and AIMMS are used in the design and operation of chemical reactors, distillation columns, cooling towers, and more. Make Introduction to Software for Chemical Engineers your go-to guide and quick reference for the use of computer software in chemical engineering applications.

This textbook is an introduction to Scientific Computing, in which several numerical methods for the computer-based solution of certain classes of mathematical problems are illustrated. The authors show how to compute the zeros, the extrema, and the integrals of continuous functions, solve linear systems, approximate functions using polynomials and

construct accurate approximations for the solution of ordinary and partial differential equations. To make the format concrete and appealing, the programming environments Matlab and Octave are adopted as faithful companions. The book contains the solutions to several problems posed in exercises and examples, often originating from important applications. At the end of each chapter, a specific section is devoted to subjects which were not addressed in the book and contains bibliographical references for a more comprehensive treatment of the material. From the review: ".... This carefully written textbook, the third English edition, contains substantial new developments on the numerical solution of differential equations. It is typeset in a two-color design and is written in a style suited for readers who have mathematics, natural sciences, computer sciences or economics as a background and who are interested in a well-organized introduction to the subject." Roberto Plato (Siegen), Zentralblatt MATH 1205.65002.

Suitable for both individual and group learning, Engineering Acoustics focuses on basic concepts and methods to make our environments quieter, both in buildings and in the open air. The author's tutorial style derives from the conviction that understanding is enhanced when the necessity behind the particular teaching approach is made clear. He also combines mathematical derivations and formulas with extensive explanations and examples to deepen comprehension. Fundamental chapters on the physics and perception of sound precede those on noise reduction (elastic isolation) methods. The last chapter deals with microphones and loudspeakers. Moeser includes major discoveries by Lothar Cremer, including the optimum impedance for mufflers and the coincidence effect behind structural acoustic transmission. The appendix gives a short introduction on the use of complex amplitudes in acoustics.

The third edition of Engineering Noise Control has been thoroughly revised, updated and extended. Each chapter contains new material, much of which is not available elsewhere. The result is a comprehensive discussion of the theoretical principles and concepts of acoustics and noise control, a detailed discussion of the hearing mechanism, noise measuring instrumentation and techniques, noise criteria, sound source characterization and emission, outdoor sound propagation, sound in rooms, sound transmission through partitions, enclosure design, dissipative and reactive mufflers, vibration isolation, equipment sound power emission calculations and active noise cancellation. The book is an excellent text for advanced undergraduate or graduate students of acoustic and noise control, and it also contains essential information and prediction techniques that make it an invaluable resource for the practitioner.

Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB shows the reader how to exploit a fuller array of numerical methods for the analysis of complex scientific and engineering systems than is conventionally employed. The book is dedicated to numerical simulation of distributed parameter systems described by mixed systems of algebraic equations, ordinary differential equations (ODEs) and partial differential equations (PDEs). Special attention is paid to the numerical method of lines (MOL), a popular approach to the solution of time-dependent PDEs, which proceeds in two basic steps: spatial discretization and time integration. Besides conventional finite-difference and element techniques, more advanced spatial-approximation methods are examined in some detail, including nonoscillatory schemes and adaptive-grid approaches. A MOL toolbox has been developed within MATLAB®/OCTAVE/SCILAB. In addition to a set of spatial approximations and time integrators, this toolbox includes a collection of application

examples, in specific areas, which can serve as templates for developing new programs. Simulation of ODE/PDE Models with MATLAB®, OCTAVE and SCILAB provides a practical introduction to some advanced computational techniques for dynamic system simulation, supported by many worked examples in the text, and a collection of codes available for download from the book's page at www.springer.com. This text is suitable for self-study by practicing scientists and engineers and as a final-year undergraduate course or at the graduate level.

The chemical PE exam is an eight-hour, open-book test, consisting of 80 multiple-choice problems. It is administered every April and October. The Chemical Engineering Reference Manual is the primary text examinees need both to prepare for and to use during the exam. It reviews current exam topics and uses practice problems to emphasize key concepts. The Chemical Engineering Reference Manual provides a detailed review for engineers studying for the chemical PE exam, preparing them for what they will find on test day. It includes more than 160 solved example problems, 164 practice problems, and test-taking strategy.

An exploration of a sampling of architectural engineering issues and project types, intended to introduce college students to architectural engineering studies and career opportunities. Here is what is discussed: 1. INTRODUCTION 2. AREA DEVELOPMENT PLANS 3. SUSTAINABLE DESIGN 4. LOW IMPACT DEVELOPMENT 5. ARCHITECTURAL DESIGN 6. FOUNDATIONS 7. STRUCTURAL SYSTEMS 8. HEATING, VENTILATING AND AIR CONDITIONING 9. PLUMBING 10. ELECTRICAL DISTRIBUTION 11. LIGHTING 12. FIRE PROTECTION 13. ACCESSIBILITY 14. ENERGY CONSERVATION 15. NOISE CONTROL 16. ROOFING SYSTEMS.

Introduction to OctaveFor Engineers and ScientistsApress

Scilab is open source equivalent for basic MATLAB package. Its usage in scientific and numerical computation is gaining popularity day by day. The biggest advantage of using Scilab over another free software Octave for the purpose is that XCOS(Scilab) rivals Simulink (MATLAB) capabilities whereas Octave does not have any such graphical programming capabilities. Present book gives introduction to Scilab for a new-user. Starting from very basic, it goes on to explain array based computing, plotting and working with files. The book is useful for students, researchers and students who are looking for a open source software for numerical computation. Present book is specially written in concise format so that new user can learn quickly in learn-by-doing fashion. CHAPTERS: 1-Introduction,2-Working with Arrays,3-Plotting,4-Data through file reading and writing, 5-Functions and loops, 6- Numerical computing formalism A guide to the development and manufacturing of pharmaceutical products written for professionals in the industry, revised second edition The revised and updated second edition of Chemical Engineering in the Pharmaceutical Industry is a practical book that highlights chemistry and chemical engineering. The book's regulatory quality strategies target the development and manufacturing of pharmaceutically active ingredients of pharmaceutical products. The expanded second edition contains revised content with many new case studies and additional example calculations that are of interest to chemical engineers. The 2nd Edition is divided into two separate books: 1) Active Pharmaceutical Ingredients (API's) and 2) Drug Product Design, Development and Modeling. The active pharmaceutical ingredients book puts the focus on the chemistry, chemical engineering, and unit operations specific to development and manufacturing of the active ingredients of the pharmaceutical product. The drug substance operations

section includes information on chemical reactions, mixing, distillations, extractions, crystallizations, filtration, drying, and wet and dry milling. In addition, the book includes many applications of process modeling and modern software tools that are geared toward batch-scale and continuous drug substance pharmaceutical operations. This updated second edition: • Contains 30new chapters or revised chapters specific to API, covering topics including: manufacturing quality by design, computational approaches, continuous manufacturing, crystallization and final form, process safety • Expanded topics of scale-up, continuous processing, applications of thermodynamics and thermodynamic modeling, filtration and drying • Presents updated and expanded example calculations • Includes contributions from noted experts in the field Written for pharmaceutical engineers, chemical engineers, undergraduate and graduate students, and professionals in the field of pharmaceutical sciences and manufacturing, the second edition of Chemical Engineering in the Pharmaceutical Industry focuses on the development and chemical engineering as well as operations specific to the design, formulation, and manufacture of drug substance and products.

The increasing demand for sophisticated network applications, allied to the growth of the Internet traffic, has lead to great efforts in the search of improvements in data transmission technologies with the intention of satisfying the increasing demand for bandwidth. So far as optical networking is concerned, WDM (Wavelength Division Multiplexing) appears as the main advance in the transmission area, because it allows transmission rates near to the theoretical limit of optical fibers, of the order of dozens of terabits a second [1]. An essential issue in optical network design is defining how the network will be controlled, that is, what type of signalling will be responsible for resource

reservation, route determination and fault handling, among other functions that constitute the control plane. Label switching, which in IP networks is exemplified by MPLS (Multiprotocol Label Switching) [2], was extended through GMPLS (Generalized Multiprotocol Label Switching) [3] to operate with several different network technologies, where the label can be represented in other ways, for example, as time-slots in TDM networks, as physical switch ports and as wavelengths (lambdas) in WDM networks.

An accessible introduction to metaheuristics and optimization, featuring powerful and modern algorithms for application across engineering and the sciences From engineering and computer science to economics and management science, optimization is a core component for problem solving. Highlighting the latest developments that have evolved in recent years, Engineering Optimization: An Introduction with Metaheuristic Applications outlines popular metaheuristic algorithms and equips readers with the skills needed to apply these techniques to their own optimization problems. With insightful examples from various fields of study, the author highlights key concepts and techniques for the successful application of commonly-used metaheuristc algorithms, including simulated annealing, particle swarm optimization, harmony search, and genetic algorithms. The author introduces all major metaheuristic algorithms and their applications in optimization through a presentation that is organized into three succinct parts: Foundations of Optimization and Algorithms provides a brief introduction to the underlying nature of optimization and the common approaches to optimization problems, random number generation, the Monte Carlo method, and the Markov chain Monte Carlo method Metaheuristic Algorithms presents common metaheuristic algorithms in detail, including genetic algorithms, simulated annealing, ant algorithms, bee

algorithms, particle swarm optimization, firefly algorithms, and harmony search Applications outlines a wide range of applications that use metaheuristic algorithms to solve challenging optimization problems with detailed implementation while also introducing various modifications used for multi-objective optimization Throughout the book, the author presents worked-out examples and real-world applications that illustrate the modern relevance of the topic. A detailed appendix features important and popular algorithms using MATLAB® and Octave software packages, and a related FTP site houses MATLAB code and programs for easy implementation of the discussed techniques. In addition, references to the current literature enable readers to investigate individual algorithms and methods in greater detail. Engineering Optimization: An Introduction with Metaheuristic Applications is an excellent book for courses on optimization and computer simulation at the upper-undergraduate and graduate levels. It is also a valuable reference for researchers and practitioners working in the fields of mathematics, engineering, computer science, operations research, and management science who use metaheuristic algorithms to solve problems in their everyday work.

Provides a concise overview of the core undergraduate physics and applied mathematics curriculum for students and practitioners of science and engineering Fundamental Math and Physics for Scientists and Engineers summarizes college and university level physics together with the mathematics frequently encountered in engineering and physics calculations. The presentation provides straightforward, coherent explanations of underlying concepts emphasizing essential formulas, derivations, examples, and computer programs. Content that should be thoroughly mastered and memorized is clearly identified while unnecessary technical

details are omitted. Fundamental Math and Physics for Scientists and Engineers is an ideal resource for undergraduate science and engineering students and practitioners, students reviewing for the GRE and graduate-level comprehensive exams, and general readers seeking to improve their comprehension of undergraduate physics. Covers topics frequently encountered in undergraduate physics, in particular those appearing in the Physics GRE subject examination Reviews relevant areas of undergraduate applied mathematics, with an overview chapter on scientific programming Provides simple, concise explanations and illustrations of underlying concepts Succinct yet comprehensive, Fundamental Math and Physics for Scientists and Engineers constitutes a reference for science and engineering students, practitioners and non-practitioners alike.

Blauert's and Xiang's "Acoustics for Engineers" provides the material for an introductory course in engineering acoustics for students with basic knowledge in mathematics. In the second, enlarged edition, the teaching aspects of the book have been substantially improved. Carefully selected examples illustrate the application of acoustic principles and problems are provided for training. "Acoustics for Engineers" is designed for extensive teaching at the university level. Under the guidance of an academic teacher it is sufficient as the sole textbook for the subject. Each chapter deals with a well defined topic and represents the material for a two-hour lecture. The 15 chapters alternate between more theoretical and more application-oriented concepts.

This book presents computer programming as a key method for solving mathematical problems. There are two versions of the book, one for MATLAB and one for Python. The book was inspired by the Springer book TCSE 6: A Primer on Scientific Programming with Python (by Langtangen), but the style is

more accessible and concise, in keeping with the needs of engineering students. The book outlines the shortest possible path from no previous experience with programming to a set of skills that allows the students to write simple programs for solving common mathematical problems with numerical methods in engineering and science courses. The emphasis is on generic algorithms, clean design of programs, use of functions, and automatic tests for verification.

Originally published in 1951 and the first English book on the subject, this textbook is aimed at both the specialist and non-specialist alike and provides a thorough and detailed introduction on the principles that underlie the action of automatic controls, servo-mechanisms and regulators. The early chapters provide a solid foundation to the theory of control and are in the most part descriptive, introducing fundamental terminology and explaining the principles, which underlie the operation of all control systems, whilst in the last three chapters more advanced techniques are used to give an account of the methods employed by control engineers. Modern contributions to the theory at the time are included and questions are set at the end of each chapter. Giving a 'historical summary of the main landmarks in the development of control theory', this book will be of value to anyone with an interest in the history of engineering.

Plant engineers are responsible for a wide range of industrial activities, and may work in any industry. This means that breadth of knowledge required by such professionals is so wide that previous books addressing plant engineering have either been limited to only certain subjects or cursory in their treatment of topics. The Plant Engineering Handbook offers comprehensive coverage of an enormous range of subjects which are of vital interest to the plant engineer and anyone connected with industrial operations or maintenance. This handbook is packed with indispensable information, from

defining just what a Plant Engineer actually does, through
selection of a suitable site for a factory and provision of basic
facilities (including boilers, electrical systems, water, HVAC
systems, pumping systems and floors and finishes) to issues
such as lubrication, corrosion, energy conservation,
maintenance and materials handling as well as environmental
considerations, insurance matters and financial concerns.
One of the major features of this volume is its comprehensive
treatment of the maintenance management function; in
addition to chapters which outline the operation of the various
plant equipment there is specialist advice on how to get the
most out of that equipment and its operators. This will enable
the reader to reap the rewards of more efficient operations,
more effective employee contributions and in turn more
profitable performance from the plant and the business to
which it contributes. The Editor, Keith Mobley and the team of
expert contributors, have practiced at the highest levels in
leading corporations across the USA, Europe and the rest of
the world. Produced in association with Plant Engineering
magazine, this book will be a source of information for plant
engineers in any industry worldwide. * A Flagship reference
work for the Plant Engineering series * Provides
comprehensive coverage on an enormous range of subjects
vital to plant and industrial engineer * Includes an
international perspective including dual units and regulations
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