
Essentials Of Electrical And Computer Engineering Kerns

Fundamentals of Electric Circuits

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Essential Computing

Essentials of Electrical and Computer Engineering

Electromagnetism for Signal Processing, Spectroscopy and Contemporary Computing

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Fundamentals of Electrical Engineering

Fundamentals of Electromagnetics for Electrical and Computer Engineering

Fundamentals of Electromagnetics for Electrical and Computer Engineering

Analog Design Essentials

Edge Computing

A First Course in Electrical and Computer Engineering

Systems and Control

Essentials of Computer Architecture, Second Edition

Elementary Mathematical and Computational Tools for Electrical and Computer Engineers Using MATLAB

Essentials of Mechatronics

Communications Engineering

Essentials of Electrical and Computer Engineering

The Digital Information Age: An Introduction to Electrical Engineering

The Elements of Computing Systems

Fundamentals of Electronic Systems Design

DSP Architecture Design Essentials

Practical Signal Processing and Its Applications

Electrical Power System Essentials

Fundamentals of Linear State Space Systems

Essentials of Electrical and Computer Engineering, Solutions Manual

Essentials of Computational Electromagnetics

Essentials of Electrical and Computer Engineering Pearson New International Edition

Essentials Of Electrical And Computer Engineering 1/e

Fundamentals of Microwave and RF Design

Foundations of Analog and Digital Electronic Circuits

TCP/IP Essentials

Fundamentals of Pattern Recognition and Machine Learning

Fundamentals of Power Electronics

Fundamentals of Electrical Circuit Analysis

Fundamentals of Electric Machines: A Primer with MATLAB

*Essentials Of Electrical
And Computer
Engineering Kerns*

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Fundamentals of Electric Circuits

Springer

The TCP/IP family of protocols have become the de facto standard in the world of networking, are found in virtually all computer communication systems, and form the basis of today's Internet. TCP/IP Essentials is a hands-on guide to TCP/IP technologies, and shows how the protocols are implemented in

practice. The book contains a series of extensively tested laboratory experiments that span the various elements of protocol definition and behavior. Topics covered include bridges, routers, LANs, static and dynamic routing, multicast and realtime service, and network management and security. The experiments are described in a Linux environment, with parallel notes on Solaris implementation. The book includes many homework exercises, and supplementary material for instructors is available. The book is

aimed at students of electrical and computer engineering and students of computer science taking courses in networking. It is also an ideal guide for engineers studying for networking certifications.

Computer Engineering Essentials

Cengage Learning

Fundamentals of Electromagnetics for Electrical and Computer Engineering, First Edition is appropriate for all beginning courses in electromagnetics, in both electrical engineering and computer engineering programs. This is ideal for anyone interested in learning more about electromagnetics. Dr. N. Narayana Rao has designed this compact, one-semester textbook in electromagnetics to fully reflect the evolution of technologies in both

electrical and computer engineering. This book's unique approach begins with Maxwell's equations for time-varying fields (first in integral and then in differential form), and also introduces waves at the outset. Building on these core concepts, Dr. Rao treats each category of fields as solutions to Maxwell's equations, highlighting the frequency behavior of physical structures. Next, he systematically introduces the topics of transmission lines, waveguides, and antennas. To keep the subject's geometry as simple as possible, while ensuring that students master the physical concepts and mathematical tools they will need, Rao makes extensive use of the Cartesian coordinate system. Topics covered in this book include: uniform plane wave

propagation; material media and their interaction with uniform plane wave fields; essentials of transmission-line analysis (both frequency- and time-domain); metallic waveguides; and Hertzian dipole field solutions. Material on cylindrical and spherical coordinate systems is presented in appendices, where it can be studied whenever relevant or convenient. Worked examples are presented throughout to illuminate (and in some cases extend) key concepts; each chapter also contains a summary and review questions. (Note: this book provides a one-semester alternative to Dr. Rao's classic textbook for two-semester courses, *Elements of Engineering Electromagnetics*, now in its Sixth Edition.)

Low Power Design Essentials NC State

University

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. *Fundamentals of Electromagnetics for Electrical and Computer Engineering, First Edition* is appropriate for all beginning courses in electromagnetics, in both electrical engineering and computer engineering programs. This is ideal for anyone interested in learning more about electromagnetics. Dr. N. Narayana Rao has designed this compact, one-semester textbook in electromagnetics to fully reflect the evolution of technologies in both electrical and computer engineering. This book's unique approach begins with Maxwell's equations for time-varying

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Microelectronic Circuits Cambridge University Press

Bits, bytes, RAM, CPUs, hard drives and dvd drives. Master the geeky acronyms

and simplify computer hardware & terminology with ease. This book is great for beginners, a basic computing class, or someone looking to buy a computer.

FE Electrical and Computer Review Manual Addison-Wesley

This textbook gives a fresh approach to an introductory course in signal processing. Its unique feature is to alternate chapters on continuous-time (analog) and discrete-time (digital) signal processing concepts in a parallel and synchronized manner. This presentation style helps readers to realize and understand the close relationships between continuous and discrete time signal processing, and lays a solid foundation for the study of practical applications such as the analysis and design of analog and digital

filters. The compendium provides motivation and necessary mathematical rigor. It generalizes the Fourier transform to Laplace and Z transforms, applies these transforms to linear system analysis, covers the time and frequency-domain analysis of differential and difference equations, and presents practical applications of these techniques to convince readers of their usefulness. MATLAB® examples are provided throughout, and over 100 pages of solved homework problems are included in the appendix. Contents:
Introduction to Signal Processing
Discrete-Time Signals and Operations
Continuous-Time Signals and Operations
Frequency Analysis of Discrete-Time Signals
Frequency Analysis of Continuous-Time Signals
Sampling

Theory and Practice
 Frequency Analysis of Discrete-Time Systems
 Frequency Analysis of Continuous-Time Systems
 Z-Domain Signal Processing
 S-Domain Signal Processing
 Applications of Z-Domain Signal Processing
 Applications of S-Domain Signal Processing
 Appendix: Solved Homework Problems
 Readership: Researchers, academics, professionals and undergraduate students in signal processing.
 Keywords: Signal Processing; Introduction; Analog and Digital; Practical; Applications; Solved Homework Problems
 Review: 0
Essential Computing Springer Science & Business Media

This reference text presents the state-of-the-art in edge computing, its primitives, devices and simulators, applications, and healthcare-based case studies. The text

provides integration of blockchain with edge computing systems and integration of edge with Internet of Things (IoT) and cloud computing. It will facilitate readers to setup edge-based environment and work with edge analytics. It covers important topics, including cluster computing, fog computing, networking architecture, edge computing simulators, edge analytics, privacy-preserving schemes, edge computing with blockchain, autonomous vehicles, and cross-domain authentication. Aimed at senior undergraduate, graduate students and professionals in the fields of electrical engineering, electronics engineering, computer science, and information technology, this text: Discusses edge data storage security with case studies and blockchain

integration with the edge computing system Covers theoretical methods with the help of applications, use cases, case studies, and examples Provides healthcare real-time case studies elaborated by utilizing the virtues of homomorphic encryption Discusses real-time interfaces, devices, and simulators in detail

Essentials of Electrical and Computer Engineering Cambridge University Press This book addresses two primary deficiencies in the linear systems textbook market: a lack of development of state space methods from the basic principles and a lack of pedagogical focus. The book uses the geometric intuition provided by vector space analysis to develop in a very sequential manner all the essential topics in linear

state system theory that a senior or beginning graduate student should know. It does this in an ordered, readable manner, with examples drawn from several areas of engineering. Because it derives state space methods from linear algebra and vector spaces and ties all the topics together with diverse applications, this book is suitable for students from any engineering discipline, not just those with control systems backgrounds and interests. It begins with the mathematical preliminaries of vectors and spaces, then emphasizes the geometric properties of linear operators. It is from this foundation that the studies of stability, controllability and observability, realizations, state feedback, observers, and Kalman filters are derived. There is a

direct and simple path from one topic to the next. The book includes both discrete- and continuous-time systems, introducing them in parallel and emphasizing each in appropriate context. Time-varying systems are discussed from generality and completeness, but the emphasis is on time-invariant systems, and only in time-domain; there is no treatment of matrix fraction descriptions or polynomial matrices. Tips for using MATLAB are included in the form of margin notes, which are placed wherever topics with applicable MATLAB commands are introduced. These notes direct the reader to an appendix, where a MATLAB command reference explains command usage. However, an instructor or student who is not interested in MATLAB usage

can easily skip these references without interrupting the flow of text.

Electromagnetism for Signal Processing, Spectroscopy and Contemporary Computing McGraw-Hill Science, Engineering & Mathematics

In *DSP Architecture Design Essentials*, authors Dejan Marković and Robert W. Brodersen cover a key subject for the successful realization of DSP algorithms for communications, multimedia, and healthcare applications. The book addresses the need for DSP architecture design that maps advanced DSP algorithms to hardware in the most power- and area-efficient way. The key feature of this text is a design methodology based on a high-level design model that leads to hardware implementation with minimum power

and area. The methodology includes algorithm-level considerations such as automated word-length reduction and intrinsic data properties that can be leveraged to reduce hardware complexity. From a high-level data-flow graph model, an architecture exploration methodology based on linear programming is used to create an array of architectural solutions tailored to the underlying hardware technology. The book is supplemented with online material: bibliography, design examples, CAD tutorials and custom software.

Differential Equations for Engineers

Professional Publications Incorporated
This book surveys the broad landscape of differential equations, including elements of partial differential equations (PDEs), and concisely presents the topics

of most use to engineers. It introduces each topic with a motivating application drawn from electrical, mechanical, and aerospace engineering. The text has reviews of foundations, step-by-step explanations, and sets of solved problems. It fosters students' abilities in the art of approximation and self-checking. The book addresses PDEs with and without boundary conditions, which demonstrates strong similarities with ordinary differential equations and clear illustrations of the nature of solutions. Furthermore, each chapter includes word problems and challenge problems. Several extended computing projects run throughout the text.

Fundamentals of Electrical Engineering

CRC Press

For use in an introductory circuit analysis

or circuit theory course, this text presents circuit analysis in a clear manner, with many practical applications. It demonstrates the principles, carefully explaining each step.

Fundamentals of Electromagnetics for Electrical and Computer Engineering
Springer Science & Business Media

An electric machine is a device that converts mechanical energy into electrical energy or vice versa. It can take the form of an electric generator, electric motor, or transformer. Electric generators produce virtually all electric power we use all over the world. Electric machine blends the three major areas of electrical engineering: power, control and power electronics. This book presents the relation of power quantities

for the machine as the current, voltage power flow, power losses, and efficiency. This book will provide a good understanding of the behavior and its drive, beginning with the study of salient features of electrical dc and ac machines.

Fundamentals of Electromagnetics for Electrical and Computer Engineering Springer Nature

This unique book contains all topics of importance to the analog designer which are essential to obtain sufficient insights to do a thorough job. The book starts with elementary stages in building up operational amplifiers. The synthesis of opamps is covered in great detail. Many examples are included, operating at low supply voltages. Chapters on noise, distortion, filters, ADC/DACs and

oscillators follow. These are all based on the extensive amount of teaching that the author has carried out world-wide.

Analog Design Essentials Elsevier Essentials of Computational Electromagnetics provides an in-depth introduction of the three main full-wave numerical methods in computational electromagnetics (CEM); namely, the method of moment (MoM), the finite element method (FEM), and the finite-difference time-domain (FDTD) method. Numerous monographs can be found addressing one of the above three methods. However, few give a broad general overview of essentials embodied in these methods, or were published too early to include recent advances. Furthermore, many existing monographs only present the final numerical results

without specifying practical issues, such as how to convert discretized formulations into computer programs, and the numerical characteristics of the computer programs. In this book, the authors elaborate the above three methods in CEM using practical case studies, explaining their own research experiences along with a review of current literature. A full analysis is provided for typical cases, including characteristics of numerical methods, helping beginners to develop a quick and deep understanding of the essentials of CEM. Outlines practical issues, such as how to convert discretized formulations into computer programs Gives typical computer programs and their numerical characteristics along with line by line explanations of programs Uses practical

examples from the authors' own work as well as in the current literature. Includes exercise problems to give readers a better understanding of the material. Introduces the available commercial software and their limitations. This book is intended for graduate-level students in antennas and propagation, microwaves, microelectronics, and electromagnetics. This text can also be used by researchers in electrical and electronic engineering, and software developers interested in writing their own code or understanding the detailed workings of code. Companion website for the book: www.wiley.com/go/sheng/cem

Edge Computing John Wiley & Sons
Fundamentals of Pattern Recognition and Machine Learning is designed for a one or two-semester introductory course

in Pattern Recognition or Machine Learning at the graduate or advanced undergraduate level. The book combines theory and practice and is suitable to the classroom and self-study. It has grown out of lecture notes and assignments that the author has developed while teaching classes on this topic for the past 13 years at Texas A&M University. The book is intended to be concise but thorough. It does not attempt an encyclopedic approach, but covers in significant detail the tools commonly used in pattern recognition and machine learning, including classification, dimensionality reduction, regression, and clustering, as well as recent popular topics such as Gaussian process regression and convolutional neural networks. In addition, the selection of

topics has a few features that are unique among comparable texts: it contains an extensive chapter on classifier error estimation, as well as sections on Bayesian classification, Bayesian error estimation, separate sampling, and rank-based classification. The book is mathematically rigorous and covers the classical theorems in the area. Nevertheless, an effort is made in the book to strike a balance between theory and practice. In particular, examples with datasets from applications in bioinformatics and materials informatics are used throughout to illustrate the theory. These datasets are available from the book website to be used in end-of-chapter coding assignments based on python and scikit-learn. All plots in the text were generated using python

scripts, which are also available on the book website.

A First Course in Electrical and Computer Engineering CRC Press

The electrical power supply is about to change; future generation will increasingly take place in and near local neighborhoods with diminishing reliance on distant power plants. The existing grid is not adapted for this purpose as it is largely a remnant from the 20th century. Can the grid be transformed into an intelligent and flexible grid that is future proof? This revised edition of *Electrical Power System Essentials* contains not only an accessible, broad and up-to-date overview of alternating current (AC) power systems, but also end-of-chapter exercises in every chapter, aiding readers in their

understanding of the material introduced. With an original approach the book covers the generation of electric energy from thermal power plants as from renewable energy sources and treats the incorporation of power electronic devices and FACTS. Throughout there are examples and case studies that back up the theory or techniques presented. The authors set out information on mathematical modelling and equations in appendices rather than integrated in the main text. This unique approach distinguishes it from other text books on Electrical Power Systems and makes the resource highly accessible for undergraduate students and readers without a technical background directly related to power engineering. After laying out the basics

for a steady-state analysis of the three-phase power system, the book examines: generation, transmission, distribution, and utilization of electric energy wind energy, solar energy and hydro power power system protection and circuit breakers power system control and operation the organization of electricity markets and the changes currently taking place system blackouts future developments in power systems, HVDC connections and smart grids The book is supplemented by a companion website from which teaching materials can be downloaded.

<https://www.wiley.com//legacy/wileychi/powersystem/material.html>

Systems and Control Prentice Hall
Fundamentals of Microwave and RF
Design enables mastery of the essential

concepts required to cross the barriers to a successful career in microwave and RF design. Extensive treatment of scattering parameters, that naturally describe power flow, and of Smith-chart-based design procedures prepare the student for success. The emphasis is on design at the module level and on covering the whole range of microwave functions available. The orientation is towards using microstrip transmission line technologies and on gaining essential mathematical, graphical and design skills for module design proficiency. This book is derived from a multi volume comprehensive book series, Microwave and RF Design, Volumes 1-5, with the emphasis in this book being on presenting the fundamental materials required to gain

entry to RF and microwave design. This book closely parallels the companion series that can be consulted for in-depth analysis with referencing of the book series being familiar and welcoming. Key Features * A companion volume to a comprehensive series on microwave and RF design * Open access ebook editions are hosted by NC State University Libraries at <https://repository.lib.ncsu.edu/handle/1840.20/36776> * 59 worked examples * An average of 24 exercises per chapter * Answers to selected exercises * Emphasis on module-level design using microstrip technologies * Extensive treatment of design using Smith charts * A parallel companion book series provides a detailed reference resource Essentials of Computer Architecture,

Second Edition Prentice Hall

To be familiar with computer engineering logic circuits and modules that are use in digital computers and devices., all in an easy style with illustrations. The book is divided into 3 parts; Part 1 covers basic logic circuits and modules, Part 2 demonstrates basic computer components and their functions, while Part 3 explains in details the low-level language to assemble codes of procedures and functions in order to communicate with the hardware. This is a valuable book and reference for junior university students as well as computer-interest individuals with technological backgrounds.

Elementary Mathematical and Computational Tools for Electrical and Computer Engineers Using

MATLAB Oxford University Press, USA

This comprehensive textbook will help readers to acquire a thorough understanding of the fundamentals of electromagnetism and its applications in various areas including spectroscopy, signal processing and contemporary computation. The text introduces the principals and applications of electricity, magnetism and electromagnetic theory which is foundation for communication systems, spectroscopy, and modern computing. It is followed by discussing the digital systems and their importance in computing, difference between digital signal transmission and wireless media, visualization techniques and useful simulation and computational techniques, besides advances in quantum computing. Aimed at senior

undergraduate and graduate students in the field of electrical engineering, electronics and communication engineering, this textbook: Provides fundamentals of electromagnetism and its applications in a single volume. Covers recent developments in computing and artificial intelligence. Discussion digital signal processing and wireless communication in depth. Covers advanced applications of electromagnetism in communication, spectroscopy, and computing. Discusses Computer Modelling & Simulation, Artificial Intelligence, and Quantum Computing.

Essentials of Mechatronics Springer Science & Business Media
THE DIGITAL INFORMATION AGE SECOND EDITION by bestselling author Roman

Kuc is designed for students considering electrical engineering as a major, and non-engineering majors interested in understanding digital communication systems. Communication between humans and smart devices takes place through sensors and actuators, with logic circuits manipulating binary data to implement useful tasks. The text then examines the basic problem of communicating audio and video data over a network connecting computers and smart devices. System operation is described from analog-to-digital conversion, signals that encode data, through the processing that extracts data from noise-corrupted signals and error correction techniques, to data packet transmission over wired and wireless networks. Basic topics from

probability and digital signal processing are presented as needed and illustrated with relevant examples. Ideas are illustrated and extended by problems and projects completed in Excel, with sophistication that evolves along with the course, starting with spreadsheet formulas and graphs, through macros, to simple Visual Basic for Applications (VBA) programming that produces animations that simulate system operation. The accrued facility with Excel techniques is a course outcome valued by students in all majors. Important Notice: Media content referenced within

the product description or the product text may not be available in the ebook version.

Communications Engineering John Wiley & Sons

Divided into four parts: circuits, electronics, digital systems, and electromagnetics, this text provides an understanding of the fundamental principles on which modern electrical engineering is based. It is suitable for a variety of electrical engineering courses, and can also be used as a text for an introduction to electrical engineering.