

Microelectronic Circuits And Devices Horenstein Solutions

Applications of optical switching in network elements and communication networks are discussed in considerable depth. Optical circuits, packet, and burst switching are all included. Composed of distinct self-contained chapters with minimum overlaps and independent references. Provides up-to-date comprehensive coverage of optical switching, technologies, devices, systems and networks. Discusses applications of optical switching in network elements and communications networks.

Remarkable progress has been achieved within recent years in developing flexible, wearable, and stretchable (FWS) electronics. These electronics will play an increasingly significant role in the future of electronics and will open new product paradigms that conventional semiconductors are not capable of. This is because flexible electronics will allow us to build flexible circuits and devices on a substrate that can be bent, stretched, or folded without losing functionality. This revolutionary change will impact how we interact with the world around us. Future electronic devices will use flexible electronics as part of ambient intelligence and ubiquitous computing for many different applications such as consumer electronics, medical, healthcare, and security devices. Thus, these devices have the potential to create a huge market all over the world. Flexible, Wearable, and Stretchable Electronics, provide a comprehensive technological review of the state-of-the-art developments in FWS electronics. This book offers the reader a taste of what is possible with FWS electronics and describes how these electronics can provide unique solutions for a wide variety of applications. Furthermore, the book introduces and explains new applications of flexible technology that has opened up the future of FWS electronics.

Combining solid state devices with electronic circuits for an introductory-level microelectronics course, this textbook offers an integrated approach so that students can truly understand how a circuit works. A concise writing style is employed, with the right level of detail and physics to help students understand how a device works. Other features include an emphasis on modelling of electronic devices, and analysis of non-linear circuits. Spice problems, worked examples and end-of-chapter problems are included.

The CRC Principles and Applications in Engineering series is a library of convenient, economical references sharply focused on particular engineering topics and subspecialties. Each volume in the series comprises chapters carefully selected from CRC's bestselling handbooks, logically organized for optimum convenience, and thoughtfully priced to fit

Optical Switching

Electromechanical Motion Devices

Proceedings of the 20th AISEM 2019 National Conference

CMOS

Instructor's Resource Manual

Part of my lecturing work in the School of Mathematics at the University of Leeds involved teaching quantum mechanics and statistical mechanics to mathematics undergraduates, and also mathematical methods to undergraduate students in the School of Electronic and Electrical Engineering at the University. The subject of this book has arisen as a result of research collaboration on device modelling with members of the School of Electronic and Electrical Engineering. I wanted to write a book which would be of practical help to those wishing to learn more about the mathematical and numerical methods involved in heteroju- tion device modelling. I have introduced only a comparatively small number of t- ics, and the reader may think that other important topics should have been included. But of the topics which I have introduced, I hope that I have given the reader some practical advice concerning the implementation of the methods which are discussed. This practical advice includes demonstrating how the implementation of the me- ods may be tailored to the speci?c device being modelled, and also includes some sections of computer code to illustrate this implementation. I have also included some background theory regarding the origins of the routines.

The updated third edition of the classic book that provides an introduction to electric machines and their emerging applications The thoroughly revised and updated third edition of Electromechanical Motion Devices contains an introduction to modern electromechanical devices and offers an understanding of the uses of electric machines in emerging applications such as in hybrid and electric vehicles. The authors—noted experts on the topic—put the focus on modern electric drive applications. The book includes basic theory, illustrative examples, and contains helpful practice problems designed to enhance comprehension. The text offers information on Tesla's rotating magnetic field, which is the foundation of reference frame theory and explores in detail the reference frame theory. The authors also review permanent-magnet ac, synchronous, and induction machines. In each chapter, the material is arranged so that if steady-state operation is the main concern, the reference frame derivation can be de-emphasized and focus placed on the steady state equations that are similar in form for all machines. This important new edition:

- Features an expanded section on Power Electronics
- Covers Tesla's rotating magnetic field
- Contains information on the emerging applications of electric machines, and especially, modern electric drive applications
- Includes online animations and a solutions manual for instructors

Written for electrical engineering students and engineers working in the utility or automotive industry, Electromechanical Motion Devices offers an invaluable book for students and professionals interested in modern machine theory and applications.

Microelectronic Circuits by Sedra and Smith has served generations of electrical and computer engineering students as the best and most widely-used text for this required course. Respected equally as a textbook and reference, "Sedra/Smith" combines a thorough presentation of fundamentals with an introduction to present-day IC technology. It remains the best text for helping students progress from circuit analysis to circuit design, developing design skills and insights that are essential to successful practice in the field. Significantly revised with the input of two new coauthors, slimmed down, and updated with the latest innovations, Microelectronic Circuits, Eighth Edition, remains the gold standard in providing the most comprehensive, flexible, accurate, and design-oriented treatment of electronic circuits available today.

This market-leading textbook continues its standard of excellence and innovation built on the solid pedagogical foundation of previous editions. This new edition has been thoroughly updated to reflect changes in technology, and includes new BJT/MOSFET coverage that combines and emphasizes the unity of the basic principles while allowing for separate treatment of the two device types where needed. Amply illustrated by a wealth of examples and complemented by an expanded number of well-designed end-of-

chapter problems and practice exercises, Microelectronic Circuits is the most current resource available for teaching tomorrow's engineers how to analyze and design electronic circuits.

Electronics Fundamentals and Applications

The Walt Hriniaik Way

Transparency Masters

Rotating Magnetic Field-Based Analysis with Online Animations

Electrical Measurement, Signal Processing, and Displays

This book showcases the state of the art in the field of sensors and microsystems, revealing the impressive potential of novel methodologies and technologies. It covers a broad range of aspects, including: bio-, physical and chemical sensors; actuators; micro- and nano-structured materials; mechanisms of interaction and signal transduction; polymers and biomaterials; sensor electronics and instrumentation; analytical microsystems, recognition systems and signal analysis; and sensor networks, as well as manufacturing technologies, environmental, food and biomedical applications. The book gathers a selection of papers presented at the 20th AISEM National Conference on Sensors and Microsystems, held in Naples, Italy in February 2019, the event brought together researchers, end users, technology teams and policy makers.

Microelectronic Circuits and Devices Pearson

In two editions spanning more than a decade, The Electrical Engineering Handbook stands as the definitive reference to the multidisciplinary field of electrical engineering. Our knowledge continues to grow, and so does the Handbook. For the third edition, it has grown into a set of six books carefully focused on specialized areas or fields of study. Each one represents a concise yet definitive collection of key concepts, models, and equations in its respective domain, thoughtfully gathered for convenient access. Combined, they constitute the most comprehensive, authoritative resource available. Circuits, Signals, and Speech and Image Processing presents all of the basic information related to electric circuits and components, analysis of circuits, the use of the Laplace transform, as well as signal, speech, and image processing using filters and algorithms. It also examines emerging areas such as text to speech synthesis, real-time processing, and embedded signal processing. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar delves into the fields of electronics, integrated circuits, power electronics, optoelectronics, electromagnetics, light waves, and radar, supplying all of the basic information required for a deep understanding of each area. It also devotes a section to electrical effects and devices and explores the emerging fields of microlithography and power electronics. Sensors, Nanoscience, Biomedical Engineering, and Instruments provides thorough coverage of sensors, materials and nanoscience, instruments and measurements, and biomedical systems and devices, including all of the basic information required to thoroughly understand each area. It explores the emerging fields of sensors, nanotechnologies, and biological effects. Broadcasting and Optical Communication Technology explores communications, information theory, and devices, covering all of the basic information needed for a thorough understanding of these areas. It also examines the emerging areas of adaptive estimation and optical communication. Computers, Software Engineering, and Digital Devices examines digital and logical devices, displays, testing, software, and computers, presenting the fundamental concepts needed to ensure a thorough understanding of each field. It treats the emerging fields of programmable logic, hardware description languages, and parallel computing in detail. Systems, Controls, Embedded Systems, Energy, and Machines explores in detail the fields of energy devices, machines, and systems as well as control systems. It provides all of the fundamental concepts needed for thorough, in-depth understanding of each area and devotes special attention to the emerging area of embedded systems. Encompassing the work of the world's foremost experts in their respective specialties, The Electrical Engineering Handbook, Third Edition remains the most convenient, reliable source of information available. This edition features the latest developments, the broadest scope of coverage, and new material on nanotechnologies, fuel cells, embedded systems, and biometrics. The engineering community has relied on the Handbook for more than twelve years, and it will continue to be a platform to launch the next wave of advancements. The Handbook's latest incarnation features a protective slipcase, which helps you stay organized without overwhelming your bookshelf. It is an attractive addition to any collection, and will help keep each volume of the Handbook as fresh as your latest research.

This book serves as a single-source reference to sinusoidal oscillators and waveform generators, using classical as well as a variety of modern electronic circuit building blocks. It provides a state-of-the-art review of a large variety of sinusoidal oscillators and waveform generators and includes a catalogue of over 600 configurations of oscillators and waveform generators, describing their relevant design details and salient performance features/limitations. The authors discuss a number of interesting, open research problems and include a comprehensive collection of over 1500 references on oscillators and non-sinusoidal waveform generators/relaxation oscillators. Offers readers a single-source reference to everything connected to sinusoidal oscillators and waveform generators, using classical as well as modern electronic circuit building blocks; Provides a state-of-the-art review of a large variety of sinusoidal oscillators and waveform generators; Includes a catalog of over 600 configurations of oscillators and waveform generators, with their relevant design details and their salient performance features/limitations.

Design Concepts for Engineers

Sinusoidal Oscillators and Waveform Generators using Modern Electronic Circuit Building Blocks

Microelectronic Devices and Circuits

Physics, Models and Circuits

Since four decades, rapid detection and monitoring in clinical and food diagnostics and in environmental and biodefense have paved the way for the elaboration of electrochemical biosensors. Thanks to their adaptability, ease of use in relatively complex samples, and their portability, electrochemical biosensors now are one of the mainstays of analytical chemistry. In particular, electrochemistry has played a pivotal role in the development of transduction methods for biological processes and biosensors. In parallel, the explosion of activity in nanoscience and nanotechnology and their huge success have profoundly affected biosensor technology, opening new avenues of research for electrode materials and transduction. This book provides an overview of biosensors based on amperometry, conductimetry, potentiometry, square-wave voltammetry, impedance, and electrochemiluminescence and describes the use of ultramicroelectrodes for the real-time monitoring and understanding of exocytosis. Areas of particular interest are the use of silver and gold nanoparticles for signal amplification, photocurrent transduction, and aptamer design. Moreover, advanced insights in the innovative concept of self-powered biosensors derived from biofuel cells are also discussed.

Practical Signals Theory with MATLAB Applications is organized around applications, first introducing the actual behavior of specific signals and then using them to motivate the presentation of mathematical concepts. Tervo sequences the presentation of the major transforms by their complexity: first Fourier, then Laplace, and finally the z-transform. The goal is to help students who can't visualize phenomena from an equation to develop their intuition and learn to analyze signals by inspection. Finally, most examples and problems are

designed to use MATLAB, making the presentation more in line with modern engineering practice.

Designed Primarily For Courses In Operational Amplifier And Linear Integrated Circuits For Electrical, Electronic, Instrumentation And Computer Engineering And Applied Science Students. Includes Detailed Coverage Of Fabrication Technology Of Integrated Circuits. Basic Principles Of Operational Amplifier, Internal Construction And Applications Have Been Discussed. Important Linear Ics Such As 555 Timer, 565 Phase-Locked Loop, Linear Voltage Regulator Ics 78/79 Xx And 723 Series D-A And A-D Converters Have Been Discussed In Individual Chapters. Each Topic Is Covered In Depth. Large Number Of Solved Problems, Review Questions And Experiments Are Given With Each Chapter For Better Understanding Of Text. Salient Features Of Second Edition * Additional Information Provided Wherever Necessary To Improve The Understanding Of Linear Ics. * Chapter 2 Has Been Thoroughly Revised. * Dc & Ac Analysis Of Differential Amplifier Has Been Discussed In Detail. * The Section On Current Mirrors Has Been Thoroughly Updated. * More Solved Examples, Pspice Programs And Answers To Selected Problems Have Been Added.

This product is a concise and useful reference for industrial engineers, scientists, designers, managers, research personnel and students. It covers an extensive range of topics that encompass the subject of measurement, instrumentation, and sensors. The Measurement Instrumentation and Sensors Handbook on CD-ROM provides easy access to the instrumentation and techniques for practical measurements required in engineering, physics, chemistry, and the life sciences.

Analysis and Design

The Electrical Engineering Handbook, Second Edition

Microelectronic Circuits and Dev.

The Measurement, Instrumentation and Sensors Handbook

Student Problem Set with Solutions

"This book teaches the principles of design, and how they apply to engineering design projects and future job activities. Updated in response to feedback, this edition features even more design projects and increased coverage of team skills."--Publisher's website.

In 1993, the first edition of The Electrical Engineering Handbook set a new standard for breadth and depth of coverage in an engineering work. Now, this classic has been substantially revised and updated to include the latest information on all the important topics in electrical engineering today. Every electrical engineer should have an opportunity to expand his expertise with this definitive guide. In a single volume, this handbook provides a complete reference to answer the questions encountered by practicing engineers in industry, government, or academia. This volume is divided into 12 major sections that encompass the entire field of electrical engineering, including circuits, signal processing, electromagnetic theory, electromagnetics, electrical effects and devices, and energy, and the emerging trends in the fields of communications, digital devices, computer engineering, systems, and biomedical engineering. A compendium of physical, chemical, material, and mathematical data completes this comprehensive resource. Every major topic is thoroughly covered and every important concept is defined, described, and illustrated. Concise but challenging but carefully explained articles are equally valuable to the practicing engineer, researchers, and students. A distinguished advisory board of contributors including many of the leading authors, professors, and researchers in the field today assist noted author and professor in offering complete coverage of this rapidly expanding field. No other single volume available today offers this combination of broad coverage and depth of exploration of the topics. The Electrical Engineering Handbook will be an invaluable resource for electrical engineers for years to come. This junior level electronics text provides a foundation for analyzing and designing analog and digital electronics throughout the book. Extensive pedagogical features including numerous design examples, problem solving technique sections, Test Your Understanding questions, and chapter checkpoints lend to this classic text. The author, Don Neamen, has many years experience as an Engineering Educator. His experience shines through in each chapter of the book, rich with realistic examples and practical rules of thumb. The Third Edition continues to offer the same hallmarks that made the previous editions such a success. Extensive Pedagogy: A short introduction at the beginning of each chapter links the new chapter material presented in previous chapters. The objectives of the chapter are then presented in the Preview section and then are listed in boldface for easy reference. Test Your Understanding Exercise Problems with provided answers have all been updated. Design Applications are included at the end of chapters. A specific electronic design related to that chapter is presented. The various stages in the design of an electronic thermomicroscope are presented throughout the text. Specific Design Problems and Examples are highlighted throughout as well.

This book begins with the physical principles involved in the operation of semiconductor components, proceeds through the physical electrical modeling, and circuit characteristics of these components, and engages the questions and problems that arise in the computer-aided design of multicomponent functional assemblies of the type found in modern integrated-circuit packages.

Principles and Practice

Handbook of Electrostatic Processes

Principles of Analog Electronics

A Hitting Clinic

The Electrical Engineering Handbook - Six Volume Set

During the ten years since the appearance of the groundbreaking, bestselling first edition of The Electronics Handbook, the field has grown and changed tremendously. With a focus on fundamental theory and practical applications, the first edition guided novice and veteran engineers along the cutting edge in the design, production, installation, operation, and maintenance of electronic devices and systems. Completely updated and expanded to reflect recent advances, this second edition continues the tradition. The Electronics Handbook, Second Edition provides a comprehensive reference to the key concepts, models, and equations necessary to analyze, design, and predict the behavior of complex electrical devices, circuits, instruments, and systems. With 23 sections that encompass the entire electronics field, from classical devices and circuits to emerging technologies and applications, The Electronics Handbook, Second Edition not only covers the engineering aspects, but also includes sections on reliability, safety, and engineering management. The book features an individual table of contents at the beginning of each chapter, which enables engineers from industry, government, and academia to navigate easily to the vital information they need. This is truly the most comprehensive, easy-to-use reference on electronics available.

In two editions spanning more than a decade, The Electrical Engineering Handbook stands as the definitive reference to the multidisciplinary field of electrical engineering. Our knowledge continues to grow, and so does the Handbook. For the third edition, it has expanded into a set of six books carefully focused on a specialized area or field of study. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar represents a concise yet definitive collection of key concepts, models, and equations in these areas, thoughtfully gathered for convenient access. Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar delves into the fields of electronics, integrated circuits, power electronics, optoelectronics, electromagnetics, light waves, and radar, supplying all of the basic information required for a deep understanding of each area.

It also devotes a section to electrical effects and devices and explores the emerging fields of microlithography and power electronics. Articles include defining terms, references, and sources of further information. Encompassing the work of the world's foremost experts in their respective specialties, Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar features the latest developments, the broadest scope of coverage, and new material in emerging areas. The Third Edition of CMOS Circuit Design, Layout, and Simulation continues to cover the practical design of both analog and digital integrated circuits, offering a vital, contemporary view of a wide range of analog/digital circuit blocks including: phase-locked-loops, delta-sigma sensing circuits, voltage/current references, op-amps, the design of data converters, and much more. Regardless of one's integrated circuit (IC) design skill level, this book allows readers to experience both the theory behind, and the hands-on implementation of, complementary metal oxide semiconductor (CMOS) IC design via detailed derivations, discussions, and hundreds of design, layout, and simulation examples.

"Provides detailed, comprehensive descriptions of electrostatic processes as well as their applications in areas such as rheology, atomization and spraying, industrial dust particle precipitation and filtering, biomedical engineering, gas treatments, atmospheric electricity, chemical reactors, and electronic devices. Summarizes electrostatic fundamentals and electrical phenomena in solids and fluids."

Electronic and Electrical Engineering

Microscale Surface Tension and Its Applications

Academic Earnings

Electronic Principles

The Electronics of Radio

This fascinating book provides a stimulating introduction to analog electronics by analysing the design and construction of a radio transceiver. Essential theoretical background is given along with carefully designed laboratory and homework exercises. The author begins with a thorough description of basic electronic components and simple circuits and goes on to describe the key elements of radio electronics, including filters, amplifiers, oscillators, mixers, and antennas. Laboratory exercises lead the reader through the design, construction, and testing of a popular radio transceiver (the NorCal 40A). A diskette containing the widely known circuit simulation software, Puff, is included in the book. This was the first book to deal with elementary electronics in the context of radio. It can be used as a textbook for introductory analog electronics courses, for more advanced undergraduate classes on radio-frequency electronics, and will also be of great interest to electronics hobbyists and radio enthusiasts.

The former Boston Red Sox hitting coach offers advice on all aspects of batting, illustrating his points with photos of past and present major leaguers

Building on advances in miniaturization and soft matter, surface tension effects are a major key to the development of soft/fluidic microrobotics. Benefiting from scaling laws, surface tension and capillary effects can enable sensing, actuation, adhesion, confinement, compliance, and other structural and functional properties necessary in micro- and nanosystems. Various applications are under development: microfluidic and lab-on-chip devices, soft gripping and manipulation of particles, colloidal and interfacial assemblies, fluidic/droplet mechatronics. The capillary action is ubiquitous in drops, bubbles and menisci, opening a broad spectrum of technological solutions and scientific investigations. Identified grand challenges to the establishment of fluidic microrobotics include mastering the dynamics of capillary effects, controlling the hysteresis arising from wetting and evaporation, improving the dispensing and handling of tiny droplets, and developing a mechatronic approach for the control and programming of surface tension effects. In this Special Issue of Micromachines, we invite contributions covering all aspects of microscale engineering relying on surface tension. Particularly, we welcome contributions on fundamentals or applications related to: Drop-botics: fluidic or surface tension-based micro/nanorobotics: capillary manipulation, gripping, and actuation, sensing, folding, propulsion and bio-inspired solutions; Control of surface tension effects: surface tension gradients, active surfactants, thermocapillarity, electrowetting, elastocapillarity; Handling of droplets, bubbles and liquid bridges: dispensing, confinement, displacement, stretching, rupture, evaporation; Capillary forces: modelling, measurement, simulation; Interfacial engineering: smart liquids, surface treatments; Interfacial fluidic and capillary assembly of colloids and devices; Biological applications of surface tension, including lab-on-chip and organ-on-chip systems.

In the real world, most signals are analog, spanning continuously varying values. Circuits that interface with the physical environment need to be able to process these signals. Principles of Analog Electronics introduces the fascinating world of analog electronics, where fields, circuits, signals and systems, and semiconductors meet. Drawing on the author's teaching experience, this richly illustrated, full-color textbook expertly blends theory with practical examples to give a clear understanding of how real electronic circuits work. Build from the Essentials of Math, Physics, and Chemistry to Electronic Components, Circuits, and Applications Building a solid foundation, the book first explains the mathematics, physics, and chemistry that are essential for grasping the principles behind the operation of electronic devices. It then examines the theory of circuits through models and important theorems. The book describes and analyzes passive and active electronic devices, focusing on fundamental filters and common silicon-based components, including diodes, bipolar junction transistors, and metal-oxide-semiconductor field-effect transistors (MOSFETs). It also shows how semiconductor devices are used to design electronic circuits such as rectifiers, power supplies, clamper and clipper circuits, and amplifiers. A chapter explores actual applications, from audio amplifiers and FM radios to battery chargers. Delve Deeper into Analog Electronics through Curiosities, Key Personalities, and Practical Examples Each chapter includes helpful summaries with key points, jargon, and terms, as well as exercises to test your knowledge. Practical tables illustrate the coding schemes to help identify commercial passive and active components. Throughout, sidebars highlight "curiosities," interesting observations, and examples that make the subject more concrete. This textbook offers a truly comprehensive introduction to the fundamentals of analog electronics, including essential background concepts. Taking a fresh approach, it connects electronics to its importance in daily life, from music to medicine and more.

Linear Integrated Circuits

Circuit Analysis and Design

Sensors and Microsystems

Microelectronic Circuits And Devices 2Nd Ed.

Mathematical and Numerical Modelling of Heterostructure Semiconductor Devices: From Theory to Programming

A third edition of this popular text which provides a foundation in electronic and electrical engineering for HND and undergraduate students. The book offers exceptional breadth of coverage without sacrificing depth. It uses a wealth of practical examples to illustrate the theory, and makes no excessive demands on the reader's mathematical skills. Ideal as a teaching tool or for self-study.

For courses in Introductory Electronics for students majoring in electrical, computer, and related engineering disciplines. Using an innovative approach, this introduction to microelectronic circuits and devices views a circuit as an entire electronic system, rather than as a collection of individual devices. It provides students with the tools necessary to make intelligent choices in the design of analog and digital systems.

Praise for CMOS: Circuit Design, Layout, and Simulation Revised Second Edition from the Technical Reviewers "A refreshing industrial flavor. Design concepts are presented as they are needed for 'just-in-time' learning. Simulating and designing circuits using SPICE is emphasized with literally hundreds of examples. Very few textbooks contain as much detail as this one. Highly recommended!" --Paul M. Furth, New Mexico State University "This book builds a solid knowledge of CMOS circuit design from the ground up. With coverage of process integration, layout, analog and digital models, noise mechanisms, memory circuits, references, amplifiers, PLLs/DLLs, dynamic circuits, and data converters, the text is an excellent reference for both experienced and novice designers alike." --Tyler J. Gomm, Design Engineer, Micron Technology, Inc. "The Second Edition builds upon the success of the first with new chapters that cover additional material such as oversampled converters and non-volatile memories. This is becoming the de facto standard textbook to have on every analog and mixed-signal designer's bookshelf." --Joe Walsh, Design Engineer, AMI Semiconductor CMOS circuits from design to implementation CMOS: Circuit Design, Layout, and Simulation, Revised Second Edition covers the practical design of both analog and digital integrated circuits, offering a vital, contemporary view of a wide range of analog/digital circuit blocks, the BSIM model, data converter architectures, and much more. This edition takes a two-path approach to the topics: design techniques are developed for both long- and short-channel CMOS technologies and then compared. The results are multidimensional explanations that allow readers to gain deep insight into the design process. Features include: Updated materials to reflect CMOS technology's movement into nanometer sizes Discussions on phase- and delay-locked loops, mixed-signal circuits, data converters, and circuit noise More than 1,000 figures, 200 examples, and over 500 end-of-chapter problems In-depth coverage of both analog and digital circuit-level design techniques Real-world process parameters and design rules The book's Web site, CMOSedu.com, provides: solutions to the book's problems; additional homework problems without solutions; SPICE simulation examples using HSPICE, LTspice, and WinSpice; layout tools and examples for actually fabricating a chip; and videos to aid learning Microelectronic Circuits and Devices

The Electronics Handbook

Electronics, Power Electronics, Optoelectronics, Microwaves, Electromagnetics, and Radar

Circuit Design, Layout, and Simulation

Microelectronic Circuits