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Multidisciplinary Approach to Modern Digital Steganography - Pramanik, Sabyasachi 2021-06-04
Steganography is the art of secret writing. The purpose of steganography is to hide the presence of a message from the intruder by using state-of-the-art methods, algorithms, architectures, models, and methodologies in the domains of cloud, internet of things (IoT), and the Android platform. Though security controls in cloud computing, IoT, and Android platforms are not much different than security controls in an IT environment, they might still present different types of risks to an organization than the classic IT solutions. Therefore, a detailed discussion is needed in case there is a breach in security. It is important to review the security aspects of cloud, IoT, and Android platforms related to steganography to determine how this new technology is being utilized and improved continuously to protect information digitally. The benefits and challenges, along with the current and potential developments for the future, are important keystones in this critical area of security research. Multidisciplinary Approach to Modern Digital Steganography reviews the security aspects of cloud, IoT, and Android platforms related to steganography and addresses emerging security concerns, new algorithms, and case studies in the field. Furthermore, the book presents a new approach to secure data storage on cloud infrastructure and IoT along with including discussions on optimization models and security controls that could be implemented. Other important topics include data transmission, deep learning techniques, machine learning, and both image and text stenography. This book is essential for forensic engineers, forensic analysts, cybersecurity analysts, cyber forensic examiners, security engineers, cybersecurity network analysts, cyber network defense analysts, and digital forensic examiners along with practitioners, researchers, academicians, and students interested in the latest techniques and state-of-the-art methods in digital steganography.

Digital Circuits - Ronald C. Emery 2020-11-25
This textbook is intended to introduce the student of electronics to the fundamentals of digital circuits, both combinational and sequential, in a reasonable and systematic manner. It proceeds from basic logic concepts to circuits and designs.

Modern Digital Electronics - R Jain 2006-08-21
Part of the McGraw-Hill Core Concepts Series, Modern Digital Electronics is an ideal textbook for a course on digital electronics at the undergraduate level. The text introduces digital systems and techniques through a bottom-up approach that allows users to start out with the basics of integrated circuits/circuit design and delve into topics such as digital design, flip flops, A/D and D/A. The book then moves on to explore elements of complex digital circuits with material like FPGAs, PLDs, PLAs, and more. Rich pedagogical features include review questions with answers, a glossary of key terms, a large number of solved examples, and numerous practice problems. This is a concise, less expensive alternative to other digital logic designs. This series is edited by Dick Dorf.

Modern Digital Design and Switching Theory - Eugene D. Fabricius 1992-06-23
Modern Digital Design and Switching Theory is an important text that focuses on promoting an understanding of digital logic and the computer programs used in the minimization of logic expressions. Several computer approaches are explained at an elementary level, including the Quine-McCluskey method as applied to single and multiple output functions, the Shannon expansion approach to multilevel logic, the Directed Search Algorithm, and the method of Consensus. Chapters 9 and 10 offer an introduction to current research in field programmable devices and multilevel logic synthesis. Chapter 9 covers more advanced topics in programmed logic devices, including techniques for input decoding and Field-Programmable Gate Arrays (FPGAs). Chapter 10 includes a discussion of boolean division, kernels and factoring, boolean tree structures, rectangle covering, binary decision diagrams, and if-then-else operators. Computer algorithms covered in these two chapters include weak division, iterative weak division, and kernel extraction by tabular methods and by rectangle covering theory. Modern Digital Design and Switching Theory is an excellent textbook for electrical and computer engineering students, in addition to a worthwhile reference for professionals working with integrated circuits.
Modern Digital Electronics 4E - Jain 2010

Foundation of Digital Electronics and Logic Design - Subir Kumar Sarkar 2014-12-10
This book focuses on the basic principles of digital electronics and logic design. It is designed as a textbook for undergraduate students of electronics, electrical engineering, computer science, physics, and information technology. The text covers the syllabi of several Indian and foreign universities. It depicts the comprehensive resources on the recent ideas in the area of digital electronics explored by leading experts from both industry and academia. A good number of diagrams are provided to illustrate the concepts related to digital electronics so that students can easily comprehend the subject. Solved examples within the text explain the concepts discussed and exercises are provided at the end of each chapter.

Transactions on Computational Science III - Kenneth Tan 2009-02-13
The Transactions on Computational Science journal is part of the Springer series Lecture Notes in Computer Science, and is devoted to the gamut of computational science issues, from theoretical aspects to application-dependent studies and the va- dation of emerging technologies. The current issue is devoted to computer systems research and the application of such research, which naturally complement each other. The issue is comprised of Part 1: Computational Visualization and Optimization, and Part 2: Computational Methods for Model Design and Analysis. Part 1 – Computational Visualization and Optimization – is devoted to state-of-the-art research carried out in this area with the use of novel computational methods. It is c-prised of five papers, each addressing a specific computational problem in the areas of shared virtual spaces, dynamic visualization, multimodal user interfaces, computational geometry, and parallel simulation, respectively. Part 2 – Computational Methods for Model Design and Analysis – continues the topic with an in-depth look at selected computational science research in the areas of data representation and analysis. The four papers comprising this part cover such areas as efficient reversible logic design, missing data analysis, stochastic computation and neural network representation for eccentric sphere models. Each paper describes a detailed experiment or a case study of the methodology presented to amplify the impact of the contribution.
Simulation and Optimization of Digital Circuits - Vazgen Melikyan 2018-04-12

This book describes new, fuzzy logic-based mathematical apparatus, which enable readers to work with continuous variables, while implementing whole circuit simulations with speed, similar to gate-level simulators and accuracy, similar to circuit-level simulators. The author demonstrates newly developed principles of digital integrated circuit simulation and optimization that take into consideration various external and internal destabilizing factors, influencing the operation of digital ICs. The discussion includes factors including radiation, ambient temperature, electromagnetic fields, and climatic conditions, as well as non-ideality of interconnects and power rails.

Modern Digital Control Sys 2e - Raymond G. Jacquot 1995
This work presents traditional methods and current techniques of incorporating the computer into closed-loop dynamic systems control, combining conventional transfer function design and state variable concepts. Digital Control Designer - an award-winning software program which permits the solution of highly complex problems - is included (3.5 IBM-compatible disk). This edition: supplies new coverage of the Ragazzini technique; describes digital filtering, including Butterworth prototype filters; and more. A solutions manual is included for instructors.

Timing Performance of Nanometer Digital Circuits Under Process Variations - Victor Champac 2018-04-18
This book discusses the digital design of integrated circuits under process variations, with a focus on design-time solutions. The authors describe a step-by-step methodology, going from logic gates to logic paths to the circuit level. Topics are presented in comprehensively, without overwhelming use of analytical formulations. Emphasis is placed on providing digital designers with understanding of the sources of process variations, their impact on circuit performance and tools for improving their designs to comply with product specifications. Various circuit-level "design hints" are highlighted, so that readers can use then to improve their designs. A special treatment is devoted to unique design issues and the impact of process variations on the performance of FinFET based circuits. This book enables readers to make optimal decisions at design time, toward more efficient circuits, with better yield and higher reliability.

Allied Physics Paper I & II - R Murugesan 2005
Paper-I | Waves & Osciiiations | Properties Of Matters | Thermal Physics | Electricity And Magnetism | Geometrical Optics | Paper-Ii | Physical Optics | Atomic Physics | Nuclear Physics | Elements Of Relativity And Uantum Mechanics | Electronics Practical Physics | Young'S Modulus By Non-Uniform Bending | Young'S Modulus (E) Non-Uniform Bending | Rigidity Modulus (Static Torsion Method)|Rigidity Modulus By Tosicenal Oscillations | Surface Tension And Interfacial Surface Tension Drop Weight Method | Comparision Of Viscosities Of Two Liquids—Burette Method | Specific Heat Capacity Of A Liquid | Sonometer—Frequency Of A.C. Mains | Determination Of Radius Of Curvature | Air Wedge — Thickness Of A Wire | Spectrometer-Diffraction On Gravity- Wevelength Of Hg Lines | Potentiometer-Voltmeter Calibration | Post Office Box-Measure Of Resistance And Specific Resistance | Ballistic Galvanometer Figure Of Merit | Logic Gates And, Or, Not | Zener Diode Characteristics | Nand Gate As A Universal Gate

Electronics for Physicists - Bryan H. Suits 2020-03-23
This book provides undergraduate physics majors and students of related sciences with a sound basic understanding of electronics and how it is used, principally in the physical sciences. While today few science students go on to careers that demand an ability to design and build electronic circuits, many will use and rely on electronics. As scientists, they will require an appropriate level of fundamental knowledge that enables them, for example, to understand what electronic equipment is doing, to correctly interpret the measurements obtained, and to appreciate the numerous links between electronics and how it is practiced, and other areas of science. Discussing electronics in the broader context and from the point of view of the scientist, this book is intended for students who are not planning to become electronics specialists. It has been written in a relatively informal, personal style and includes detailed examples, as well as some "outside the box" material to inspire thought and creativity. A selection of relevant exercises is included at the end of each chapter.

Modern Digital and Analog Communication Systems - B. P. Lathi 1995
With exceptionally clear writing, Lathi takes students step by step through a history of communications systems from elementary signal analysis to advanced concepts in communications theory. The first four chapters of the text present basic principles, subsequent chapters offer ample material for flexibility in course content and level. All Topics are covered in detail, including a thorough treatment of frequency modulation and phase modulation. Numerous worked examples in each chapter and over 300 end-of-chapter problems and numerous illustrations and figures support the content.

Digital Logic Design - Brian Holdsworth 2002-11-01
New, updated and expanded topics in the fourth edition include: EBCDIC, Grey code, practical applications of flip-flops, linear and shaft encoders, memory elements and FPGAs. The section on fault-finding has been expanded. A new chapter is dedicated to the interface between digital components and analog voltages. *A highly accessible, comprehensive and fully up to date digital systems text *A well known and respected text now revamped for current courses *Part of the Newnes suite of texts for HND/1st year modules

Transmission Lines in Digital Systems for EMC Practitioners - Clayton R. Paul 2011-10-24
This is a brief but comprehensive book covering the set of EMCskills that EMC practitioners today require in order to besuccessful in high-speed, digital electronics. The basicskills in the book are new and weren't studied in mostcurricula some ten years ago. The rapidly changing digitaltechnology has created this demand for a discussion of new analysisskills particularly for the analysis of transmission lineswhere the conductors that interconnect the electronic modules havebecome "electrically large," longer than a tenth of awavelength, which are increasingly becoming important. Crosstalk between the lines is also rapidly becoming asignificant problem in getting modern electronic systems to worksatisfactorily. Hence this text concentrates on the modelingof "electrically large" connection conductors wherepreviously-used Kirchhoff's voltage and current laws andlumped-circuit modeling have become obsolete because of theincreasing speeds of modern digital systems. This has causedan increased emphasis on Signal Integrity. Until as recently as some ten years ago, digital system clockspeeds and data rates were in the hundreds of megahertz (MHz)range. Prior to that time, the "lands" on printedcircuit boards (PCBs) that interconnect the electronic modules hadlittle or no impact on the proper functioning of those electroniccircuits. Today, the clock and data speeds have moved intothe low gigahertz (GHz) range.

Popular Electronics - 1981

Issues in Electronics Research and Application: 2011 Edition - 2012-01-09
Issues in Electronics Research and Application: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Electronics Research and Application. The editors have built Issues in Electronics Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Electronics Research and Application in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electronics Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Electronics and Microprocessors - 2013

Modern Digital Halftoning, Second Edition - Daniel L. Lau 2001-02-21
A comprehensive treatment of various approaches to monochrome and digital halftoning. It describes ideal spatial and spectral characteristics of green- and blue-noise halftoning that provide patterns of visual appeal and computational complexity in a wide range of printing technologies. The book comes with a CD-ROM of algorithms and statistics with colour examples.

Advances in Energy Technology - Ramesh C. Bansal 2021-07-27
This book presents select proceedings of International Conference on Energy, Material Sciences and Mechanical Engineering (EMSME) 2020, held at National Institute of Technology Delhi. Various topics covered in this book include clean materials, solar energy systems, wind energy systems, power optimization, grid integration of renewable energy, smart energy storage technologies, artificial

intelligence in solar and wind system, analysis of clean energy material in environment, converter topology, modelling and simulation. This book will be useful for researchers and professionals working in the areas of solar material science, electrical engineering, and energy technologies.

Modern Digital Circuits - Samuel Weber 1964
The 109 articles making up the book have all appeared in Electronics magazine (from) 1961 to 1963.

Digital System Design Using VHDL - Rishabh Anand 2013
The book covers the complete syllabus of subject as suggested by most of the universities in India. Generic VHDL code is taught and used through out the book so that different companies. VHDL tools can be used if desired. Moving from the unknown in a logical manner. Subject matter in each chapter develops systematically from inceptions. Large number of carefully selected worked examples in sufficient details. No other reference is required. Ideally suited for self-study.

Molecular Dynamics Simulations in Statistical Physics: Theory and Applications - Hiqmet Kamberaj 2020-03-20
This book presents computer simulations using molecular dynamics techniques in statistical physics, with a focus on macromolecular systems. The numerical methods are introduced in the form of computer algorithms and can be implemented in computers using any desired computer programming language, such as Fortran 90, C/C++, and others. The book also explains how some of these numerical methods and their algorithms can be implemented in the existing computer programming software of macromolecular systems, such as the CHARMM program. In addition, it examines a number of advanced concepts of computer simulation techniques used in statistical physics as well as biological and physical systems. Discussing the molecular dynamics approach in detail to enhance readers understanding of the use of this method in statistical physics problems, it also describes the equations of motion in various statistical ensembles to mimic real-world experimental conditions. Intended for graduate students and research scientists working in the field of theoretical and computational biophysics, physics and chemistry, the book can also be used by postgraduate students of other disciplines, such as applied mathematics, computer sciences, and bioinformatics. Further, offering insights into fundamental theory, it as a valuable resource for expert practitioners and programmers and those new to the field.

Contemporary Digital Forensic Investigations of Cloud and Mobile Applications - Kim-Kwang Raymond Choo 2016-10-12
Contemporary Digital Forensic Investigations of Cloud and Mobile Applications comprehensively discusses the implications of cloud (storage) services and mobile applications on digital forensic investigations. The book provides both digital forensic practitioners and researchers with an up-to-date and advanced knowledge of collecting and preserving electronic evidence from different types of cloud services, such as digital remnants of cloud applications accessed through mobile devices. This is the first book that covers the investigation of a wide range of cloud services. Dr. Kim-Kwang Raymond Choo and Dr. Ali Dehghantanha are leading researchers in cloud and mobile security and forensics, having organized research, led research, and been published widely in the field. Users will gain a deep overview of seminal research in the field while also identifying prospective future research topics and open challenges. Presents the most current, leading edge research on cloud and mobile application forensics, featuring a panel of top experts in the field Introduces the first book to provide an in-depth overview of the issues surrounding digital forensic investigations in cloud and associated mobile apps Covers key technical topics and provides readers with a complete understanding of the most current research findings Includes discussions on future research directions and challenges

Digital Electronics - Rishabh Anand
The book covers the complete syllabus of subject as suggested by most of the universities in India. Proper balance between mathematical details and qualitative discussion. Subject matter in each chapter develops systematically from inceptions. Large number of carefully selected worked examples in sufficient details. Each chapter of the book is saturated with much needed test supported by neat and self-explanatory diagrams to make the subject self-speaking to a great extent. No other reference is required. Ideally suited for self-study.

The Broadband Problem - Charles H. Ferguson 2004-04-21

As the Internet revolution continues to unfold and transform telecommunications, pressure is building for faster, less expensive, and more widely accessible broadband service. Such a development would facilitate improved and less expensive traditional applications such as voice telephony and web browsing. It would also enable new and useful applications such as Internet-based television, videoconferencing, and software distribution. Broadband has great potential to improve efficiency and productivity, even to improve national security in some cases. Broadband service and affordability, however, have consistently lagged well behind demand and progress in information technology, with damaging results. The Internet revolution remains incomplete and threatens to stagnate if the situation continues. In The Broadband Problem, economist and technology entrepreneur Charles H. Ferguson explains the causes and ramifications of this damaging bottleneck, and he offers suggestions on improving the current state of affairs. He asserts that current telecommunications law and policy have not provided sufficient levels of new entry, competition, and innovation in the local telecom market. The continuing dominance of ILECs (incumbent local exchange carriers) in that market impedes the healthy, and much-needed, development of an efficient broadband market. The result of these policy and market failures is inadequate technological progress, innovation, and productivity in advanced Internet services and telecommunication services generally. The broadband problem is holding us back, and thus must be addressed and solved. With this important volume, Charles Ferguson has contributed mightily to that mission.

Aircraft Digital Electronic and Computer Systems - Mike Tooley 2012-08-21
Butterworth-Heinemann's Aircraft Engineering Principles and Practice Series provides students, apprentices and practicing aerospace professionals with the definitive resources to advance their aircraft engineering maintenance studies and career. This book provides an introduction to the principles of aircraft digital and electronic systems. It is written for anyone pursuing a career in aircraft maintenance engineering or a related aerospace engineering discipline, and in particular will be suitable for those studying for licensed aircraft maintenance engineer status as part of an EASA or FAR-147 approved course or taking Aerospace Engineering City and Guilds modules, EDEXCEL National Units, EDEXCEL Higher National Units or a Degree in aircraft engineering.

Aircraft Digital Electronic and Computer Systems - Michael H. Tooley 2007
'Aircraft Digital Electronic and Computer Systems' provides an introduction to the principles of this subject. It is written for anyone pursuing a career in aircraft maintenance engineering or a related aerospace engineering discipline.

High Power Microwaves - James Benford 2007-02-05
The first edition of High Power Microwaves was considered to be the defining book for this field. Not merely updated but completely revised and rewritten, the second edition continues this tradition. Written from a systems perspective, the book provides a unified, coherent presentation of the fundamentals in this rapidly changing field. The p

Modern Digital Control Systems - Raymond G. Jacquot 2019-01-22
This work presents traditional methods and current techniques of incorporating the computer into closed-loop dynamic systems control, combining conventional transfer function design and state variable concepts. Digital Control Designer - an award-winning software program which permits the solution of highly complex problems - is available on the CR

Post-digital Electronics - Francis R. Pettit 1982

Digital Electronics - Anil K. Maini 2007-09-27
The fundamentals and implementation of digital electronics are essential to understanding the design and working of consumer/industrial electronics, communications, embedded systems, computers, security and military equipment. Devices used in applications such as these are constantly decreasing in size and employing more complex technology. It is therefore essential for engineers and students to understand the fundamentals, implementation and application principles of digital electronics, devices and integrated circuits. This is so that they can use the most appropriate and effective technique to suit their technical need. This book provides practical and comprehensive coverage of digital electronics, bringing together information on fundamental theory, operational aspects and potential applications. With worked problems,

examples, and review questions for each chapter, Digital Electronics includes: information on number systems, binary codes, digital arithmetic, logic gates and families, and Boolean algebra; an in-depth look at multiplexers, de-multiplexers, devices for arithmetic operations, flip-flops and related devices, counters and registers, and data conversion circuits; up-to-date coverage of recent application fields, such as programmable logic devices, microprocessors, microcontrollers, digital troubleshooting and digital instrumentation. A comprehensive, must-read book on digital electronics for senior undergraduate and graduate students of electrical, electronics and computer engineering, and a valuable reference book for professionals and researchers.

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Digital Electronics: Principles and Applications - Roger Tokheim 2013-01-16
The eighth edition of Digital Electronics: Principles and Applications provides a concise, modern approach to this fascinating subject. It has been written so that a so that a student needs no prior knowledge of electrical theory and principles and at a level that allows students with limited math and reading skills can gain a clear understanding of concepts and application covered in a digital electronics course. The textbook has been noted for its easy-to-read style and colorful illustrations. It is ideal for a wide range of electronics courses, especially programs in which students must learn the essentials and quickly apply them to real job situations.

A Textbook of Applied Electronics - RS Sedha 2008-02
The present book has been throughly revised and lot of useful material has been added .saveral photographs of electronic devices and their specifications sheets have been included.This will help the students to have a better understanding of the electrinic devices and circuits from application point of view.the mistake and misprints,which has crept in,have been eliminated in this edition.

Analog and Digital Circuits for Electronic Control System Applications - Gerald Luecke 2004-09-24
In system design (in particular, industrial control systems), there is, and has been, a continuous need to sense real-world analog quantities (such as temperature, pressure, or humidity), make computations with them, and then perform some action with the result. In today's systems, the computations need to be made at increased speeds and the accuracy with which the computations must be made, even as the speed increases, must be the same or higher as time progresses. The advent of the microcontroller, and its extensive use in all types of control applications, many of them battery powered, has led to new control system design approaches. Rather than computing using analog quantities, the analog quantities are sensed, conditioned, and converted to digital, processed digitally, and then converted back to an analog output, which is then used to perform the necessary output action. This practical textbook covers the latest techniques in microcontroller-based control system design. It is aimed at engineering students and engineers new to working with microcontrollers. It covers the fundamentals of: 1. Sensors and the electrical signals they output. 2. The design and application of the electronic circuits that receive and condition (change or modify) the sensor analog signals. 3. The design and application of the circuits that convert analog signals to digital and digital signals to analog. 4. The makeup and operation of a microcontroller and how to program it. 5. The application of electronic circuits for system power control. The book, written by an experienced microcontroller engineer and textbook author, is suitable for community college students, technical school students, technicians and engineers just being introduced to microcontroller system design. It is an introductory book, focusing on real-world implementation of a basic control system, with real-world circuit examples. Readers will find clearly written discussion coupled with lots of illustrations. They will also find worked-out examples that illustrate principles within each chapter and quizzes to aid understanding. Besides these specifics, a hands-on project, suitable for an electronics microcontroller laboratory course, using the popular and low-cost TI MSP430 microcontroller, is discussed in detail. The accompanying CD-ROM contains microcontrollers application notes, code for the software examples, and problem solutions. * Seasoned Texas Instruments designer provides a ground-up perspective

on embedded control systems * Pedagogical style provides a self-learning approach with examples, quizzes and review features * CD-ROM contains source code and more!

ELECTRONIC DEVICES AND CIRCUITS - I. J. NAGRATH 2007-09-13
Designed specifically for undergraduate students of Electronics and Electrical Engineering and its related disciplines, this book offers an excellent coverage of all essential topics and provides a solid foundation for analysing electronic circuits. It covers the course named Electronic Devices and Circuits of various universities. The book will also be useful to diploma students, AMIE students, and those pursuing courses in B.Sc. (Electronics) and M.Sc. (Physics). The students are thoroughly introduced to the full spectrum of fundamental topics beginning with the theory of semiconductors and p-n junction behaviour. The devices treated include diodes, transistors—BJTs, JFETs and MOSFETs—and thyristors. The circuitry covered comprises small signal (ac), power amplifiers, oscillators, and operational amplifiers including many important applications of those versatile devices. A separate chapter on IC fabrication technology is provided to give an idea of the technologies being used in this area. There are a variety of solved examples and applications for conceptual understanding. Problems at the end of each chapter are provided to test, reinforce and enhance learning.

Foundations of Analog and Digital Electronic Circuits - Anant Agarwal 2005-07-01
Unlike books currently on the market, this book attempts to satisfy two goals: combine circuits and electronics into a single, unified treatment, and establish a strong connection with the contemporary world of digital systems. It will introduce a new way of looking not only at the treatment of circuits, but also at the treatment of introductory coursework in engineering in general. Using the concept of ''abstraction,'' the book attempts to form a bridge between the world of physics and the world of large computer systems. In particular, it attempts to unify electrical engineering and computer science as the art of creating and exploiting successive abstractions to manage the complexity of building useful electrical systems. Computer systems are simply one type of electrical systems. +Balances circuits theory with practical digital electronics applications. +Illustrates concepts with real devices. +Supports the popular circuits and electronics course on the MIT OpenCourse Ware from which professionals worldwide study this new approach. +Written by two educators well known for their innovative teaching and research and their collaboration with industry. +Focuses on contemporary MOS technology.

Digital Design Using VHDL - William J. Dally 2016
Provides students with a system-level perspective and the tools they need to understand, analyze and design complete digital systems using VHDL. It goes beyond the design of simple combinational and sequential modules to show how such modules are used to build complete systems, reflecting digital design in the real world.

Digital Electronics and Design with VHDL - Volnei A. Pedroni 2008-01-25
Digital Electronics and Design with VHDL offers a friendly presentation of the fundamental principles and practices of modern digital design. Unlike any other book in this field, transistor-level implementations are also included, which allow the readers to gain a solid understanding of a circuit's real potential and limitations, and to develop a realistic perspective on the practical design of actual integrated circuits. Coverage includes the largest selection available of digital circuits in all categories (combinational, sequential, logical, or arithmetic); and detailed digital design techniques, with a thorough discussion on state-machine modeling for the analysis and design of complex sequential systems. Key technologies used in modern circuits are also described, including Bipolar, MOS, ROM/RAM, and CPLD/FPGA chips, as well as codes and techniques used in data storage and transmission. Designs are illustrated by means of complete, realistic applications using VHDL, where the complete code, comments, and simulation results are included. This text is ideal for courses in Digital Design, Digital Logic, Digital Electronics, VLSI, and VHDL; and industry practitioners in digital electronics. Comprehensive coverage of fundamental digital concepts and principles, as well as complete, realistic, industry-standard designs Many circuits shown with internal details at the transistor-level, as in real integrated circuits Actual technologies used in state-of-the-art digital circuits presented in conjunction with fundamental concepts and principles Six chapters dedicated to VHDL-based techniques, with all VHDL-based designs synthesized onto CPLD/FPGA chips