

Digital Logic Design By Tocci 10th Edition

Updated to reflect the latest advances in the field, the Sixth Edition of Fundamentals of Digital Logic and Microcontrollers further enhances its reputation as the most accessible introduction to the basic principles and tools required in the design of digital systems. Features updates and revision to more than half of the material from the previous edition Offers an all-encompassing focus on the areas of computer design, digital logic, and digital systems, unlike other texts in the marketplace Written with clear and concise explanations of fundamental topics such as number system and Boolean algebra, and simplified examples and tutorials utilizing the PIC18F4321 microcontroller Covers an enhanced version of both combinational and sequential logic design, basics of computer organization, and microcontrollers

Modern electronics is the most visible result of research in solid state physics. Transistors and integrated circuits are used everywhere in ever increasing numbers. The microprocessor controlled coffee-pot exists. Most experimental physicists, and, indeed, experimental scientists in most disciplines, study their subject with the aid of apparatus containing significant amounts of electronics and much of that electronics is digital. In order to design experiments and apparatus or simply to understand how a piece of equipment works, an understanding of electronics has become increasingly important. In recognition that electronics has pervaded so many areas, courses in digital electronics are now a recommended part of physics and many other science degree courses. At the introductory level, digital electronics is, primarily, a practical subject with relatively few basic concepts and any complexity arises from the coupling together of many simple circuits and the extensive use of feedback. Designing an electronic circuit and then getting it to work correctly provides an experience, and a sense of achievement, which is significantly different from most undergraduate work as it more closely resembles project work than standard laboratory practicals.

Digital Systems Design with FPGAs and CPLDs explains how to design and develop digital electronic systems using programmable logic devices (PLDs). Totally practical in nature, the book features numerous (quantify when known) case study designs using a variety of Field Programmable Gate Array (FPGA) and Complex Programmable Logic Devices (CPLD), for a range of applications from control and instrumentation to semiconductor automatic test equipment. Key features include:

- * Case studies that provide a walk through of the design process, highlighting the trade-offs involved.
- * Discussion of real world issues such as choice of device, pin-out, power supply, power supply decoupling, signal integrity- for embedding FPGAs within a PCB based design.

With this book engineers will be able to:

- * Use PLD technology to develop digital and mixed signal electronic systems
- * Develop PLD based designs using both schematic capture and VHDL synthesis techniques
- * Interface a PLD to digital and mixed-signal systems
- * Undertake complete design exercises from design concept through to the build and test of PLD based electronic hardware

This book will be ideal for electronic and computer engineering students taking a practical or Lab based course on digital systems development using PLDs and for engineers in industry looking for concrete advice on developing a digital system using a FPGA or CPLD as its core. Case studies that provide a walk through of the design process, highlighting the

trade-offs involved. Discussion of real world issues such as choice of device, pin-out, power supply, power supply decoupling, signal integrity- for embedding FPGAs within a PCB based design.

The second edition of this well-received text continues to provide a coherent and comprehensive coverage of Pulse and Digital Circuits, suitable as a textbook for use by undergraduate students pursuing courses in Electrical and Electronics Engineering, Electronics and Communication Engineering, Electronics and Instrumentation Engineering, and Telecommunication Engineering. It presents clear explanations of the operation and analysis of semiconductor pulse circuits. Practical pulse circuit design methods are investigated in detail. The book provides numerous fully worked-out, laboratory-tested examples to give students a solid grounding in the related design concepts. It includes a number of classroom-tested problems to encourage students to apply theory in a logical fashion. Review questions, fill in the blanks, and multiple choice questions offer the students the opportunity to test their understanding of the text material. This text will be also appropriate for self-study by AMIE and IETE students. NEW TO THIS EDITION :

- Includes two new chapters—Logic Gates and Logic Families—to meet the curriculum requirements.
- Provides short questions with answers at the end of each chapter.
- Presents several new illustrations, examples and exercises

The Fourth edition of this well-received text continues to provide coherent and comprehensive coverage of digital circuits. It is designed for the undergraduate students pursuing courses in areas of engineering disciplines such as Electrical and Electronics, Electronics and Communication, Electronics and Instrumentation, Telecommunications, Medical Electronics, Computer Science and Engineering, Electronics, and Computers and Information Technology. It is also useful as a text for MCA, M.Sc. (Electronics) and M.Sc. (Computer Science) students. Appropriate for self study, the book is useful even for AMIE and grad IETE students. Written in a student-friendly style, the book provides an excellent introduction to digital concepts and basic design techniques of digital circuits. It discusses Boolean algebra concepts and their application to digital circuitry, and elaborates on both combinational and sequential circuits. It provides numerous fully worked-out, laboratory tested examples to give students a solid grounding in the related design concepts. It includes a number of short questions with answers, review questions, fill in the blanks with answers, multiple choice questions with answers and exercise problems at the end of each chapter.

This third volume in the comprehensive Digital Electronics series, which explores the basic principles and concepts of digital circuits, focuses on finite state machines. These machines are characterized by a behavior that is determined by a limited and defined number of states, the holding conditions for each state, and the branching conditions from one state to another. They only allow one transition at a time and can be divided into two components: a combinational logic circuit and a sequential logic circuit. The approach is gradual and relatively independent of each other chapters. To facilitate the assimilation and practical implementation of various concepts, the book is complemented by a selection of practical exercises.

The omnipresence of electronic devices in our everyday lives has been accompanied by the downscaling of chip feature sizes and the ever increasing complexity of digital circuits. This book is devoted to the analysis and design of digital circuits, where the signal can assume only two possible logic levels. It deals with the basic principles and concepts of digital electronics. It addresses all

aspects of combinational logic and provides a detailed understanding of logic gates that are the basic components in the implementation of circuits used to perform functions and operations of Boolean algebra. Combinational logic circuits are characterized by outputs that depend only on the actual input values. Efficient techniques to derive logic equations are proposed together with methods of analysis and synthesis of combinational logic circuits. Each chapter is well structured and is supplemented by a selection of solved exercises covering logic design practices.

Packed with nearly 400 illustrative examples and exercises, this book begins with Boolean Algebra and combination logic circuits and goes on to explain the various methods of simplification of Boolean expressions. A brief deviation is taken to look at various logic families, their structure and operation. This is followed by a simple approach to the design of combination circuits with MSI components and Programmable Logic Devices with illustrations of adders, comparators, decoders, encoders, multipliers and various forms of PLDs. A treatise on sequential circuits begins with explanations of all types of flip-flops and their applications backed by delightful examples and exercises. The book concludes with an interesting chapter on the analysis and design of synchronous sequential circuits. While the book is a remarkable reference material for logic design engineers, it provides a simplified and well-illustrated approach to students who desire a systematic and vibrant approach to the study of logic design.

Contents Logic Design using MSI Components and programmable Logic Devices Simplification of Boolean Expression Logic gates and Families Flip-Flops and their Applications Synchronous Sequential Circuits Appendix.

Microprocessor Engineering provides an insight in the structures and operating techniques of a small computer. The book is comprised of 10 chapters that deal with the various aspects of computing. The first two chapters tackle the basic arithmetic and logic processes. The third chapter covers the various memory devices, both ROM and RWM. Next, the book deals with the general architecture of microprocessor. The succeeding three chapters discuss the software aspects of machine operation, while the last remaining three chapters talk about the relationship of the microprocessor with the outside world. The text will be of great use to undergraduate students of various disciplines. Practitioners of computer-related fields with no previous digital experience will find this book useful.

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

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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.

The lab manual by Greg Moss (A Design Approach) features digital logic design using complex programmable logic devices (CPLDs) or field programmable gate arrays (FPGAs). In other words, this lab manual uses Quartus software rather than the old-school hands-on lab equipment. ISBN-10: 0132153815 ISBN-13: 9780132153812

Digital Logic Design, Second Edition provides a basic understanding of digital logic design with emphasis on the two alternative methods of design available to the digital engineer. This book describes the digital design techniques, which have become increasingly important. Organized into 14 chapters, this edition begins with an overview of the essential laws of Boolean algebra, K-map plotting techniques, as well as the simplification of Boolean functions. This text then presents the properties and develops the characteristic equations of a number of various types of flip-flop. Other chapters consider the design of synchronous and asynchronous counters using either discrete flip-flops or shift registers. This book discusses as well the design and implementation of event driven logic circuits using the NAND sequential equation. The final chapter deals with simple coding techniques and the principles of error detection and correction. This book is a valuable resource for undergraduate students, digital engineers, and scientists.

As electronic devices become increasingly prevalent in everyday life, digital circuits are becoming even more complex and smaller in size. This book presents the basic principles of digital electronics in an accessible manner, allowing the reader to grasp the principles of combinational and sequential logic and the underlying techniques for the analysis and design of digital circuits.

Providing a hands-on approach, this work introduces techniques and methods for establishing logic equations and designing and analyzing digital circuits. Each chapter is supplemented with practical examples and well-designed exercises with worked solutions. This second of three volumes focuses on sequential and arithmetic logic circuits. It covers various aspects related to the following topics: latch and flip-flop; binary counters; shift registers; arithmetic and logic circuits; digital integrated circuit technology; semiconductor memory; programmable logic circuits. Along with the two accompanying volumes, this book is an indispensable tool for students at a bachelors or masters level seeking to improve their understanding of digital electronics, and is detailed enough to serve as a reference for electronic, automation and computer engineers.

Tocci and Widmer use a block diagram approach to basic logic operations, enabling readers to have a firm understanding of logic principles before they study the electrical characteristics of the logic ICs. KEY TOPICS For each new device or circuit, the authors describe the principle of the operation, give thorough examples, and then show its actual application. An excellent reference on modern digital systems.

The Use Of Digital Circuits Is Increasing In All Disciplines Of Engineering. Consequently Students Need To Have An In-Depth

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Knowledge On Them. Digital Circuits And Design Is A Textbook Dealing With The Basics Of Digital Technology Including The Design Asp

Digital Design and Computer Organization introduces digital design as it applies to the creation of computer systems. It summarizes the tools of logic design and their mathematical basis, along with in depth coverage of combinational and sequential circuits. The book includes an accompanying CD that includes the majority of circuits highlig

Fundamentals of Digital Logic and Microcomputer Design, haslong been hailed for its clear and simple presentation of theprinciples and basic tools required to design typical digitalsystems such as microcomputers. In this Fifth Edition, the authorfocuses on computer design at three levels: the device level, thelogic level, and the system level. Basic topics are covered, suchas number systems and Boolean algebra, combinational and sequentiallogic design, as well as more advanced subjects such as assemblylanguage programming and microprocessor-based system design.Numerous examples are provided throughout the text. Coverage includes: Digital circuits at the gate and flip-flop levels Analysis and design of combinational and sequentialcircuits Microcomputer organization, architecture, and programmingconcepts Design of computer instruction sets, CPU, memory, and I/O System design features associated with popular microprocessorsfrom Intel and Motorola Future plans in microprocessor development An instructor's manual, available upon request Additionally, the accompanying CD-ROM, contains step-by-step-procedures for installing and using Altera Quartus II software, MASM 6.11 (8086), and 68asmsim (68000), provides valuable simulation results via screen shots. Fundamentals of Digital Logic and Microcomputer Design is an essential reference that will provide you with the fundamentaltools you need to design typical digital systems.

This book takes an authoritative introduction to basic principles of digital design and practical requirements in both board-level and VLSI systems. Digital Design covers the most widespread logic design practices while building a solid foundation of theoretical and engineering principles. This easy-to-follow book uses a practical writing style. Includes low voltage and LVCMOS/LVTTL.

Coverage of Complex Programmable Logic Devices (CPLDs) and Field-Programmable Gate Arrays (FPGAs). Introduction of HDL-based digital design Covers VHDL as well as ABEL. Including simulation and synthesis.

"Engineering Digital Design" provides the most extensive coverage of any available textbook in digital logic and design. Modern notation combines with a state-of-the-art treatment of the most important subjects in digital design to provide the student with the background needed to enter industry or graduate study at a competitive level. Software programs, including a logic minimizer and a logic simulator, are provided on a CD-ROM and include detailed instructions for use.

This book presents the basic concepts used in the design and analysis of digital systems and introduces the principles of digital computer organization and design.

For all courses in digital electronics, from introductory through advanced. Like previous editions, this text will be used widely in technology classes ranging from high schools and two-year programs to four-year engineering, engineering technology, and computer science programs. Take a journey in Digital Systems from novice to expert Written for all courses in digital

electronics--from introductory to advanced, from high school to two- and four-year college programs--this Twelfth Edition of Digital Systems thoroughly prepares students for the study of digital systems and computer and microcontroller hardware. The text begins with the basics of digital systems, including the AHDL hardware description language, then gradually progresses to increasingly challenging topics, including the more complex VHDL. The text is comprehensive yet highly readable, clearly introducing the purpose and fundamentals of each topic before delving into more technical descriptions. It is also definition-focused, with new terms listed in each chapter and defined in a glossary. This Twelfth Edition has been thoroughly revised and updated with new material on section-level learning outcomes, Quadrature Shaft Encoders used to obtain absolute shaft positions, troubleshooting prototype circuits using systematic fault isolation techniques, Time Division Multiplexing, expanded discussion of VHDL data objects and more!

For courses on digital design in an Electrical Engineering, Computer Engineering, or Computer Science department. Digital Design, fifth edition is a modern update of the classic authoritative text on digital design. This book teaches the basic concepts of digital design in a clear, accessible manner. The book presents the basic tools for the design of digital circuits and provides procedures suitable for a variety of digital applications.

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

Digital Systems: Principles and Applications, 10/e Pearson Education India Digital Systems Principles and Applications. Solutions manual Digital Logic Design Elsevier

In 1993, the first edition of The Electrical Engineering Handbook set a new standard for breadth and depth of coverage in an engineering reference 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 well-organized book is divided into 12 major sections that encompass the entire field of electrical engineering, including circuits, signal processing, electronics, 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. Conceptually challenging but carefully explained articles are equally valuable to the practicing engineer, researchers, and students. A distinguished advisory board and contributors including many of the leading authors, professors, and researchers

in the field today assist noted author and professor Richard Dorf 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.

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.

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.

This text categorises questions & problems at the end of each chapter into one of four types: C (Challenging), D (Design), N (New) introducing new concepts/techniques, & T (Troubleshooting).

The Newnes Know It All Series takes the best of what our authors have written to create hard-working desk references that will be an engineer's first port of call for key information, design techniques and rules of thumb. Guaranteed not to gather dust on a shelf! Electronics Engineers need to master a wide area of topics to excel. The Circuit Design Know It All covers every angle including semiconductors, IC Design and Fabrication, Computer-Aided Design, as well as Programmable Logic Design. • A 360-degree view from our best-selling authors • Topics include fundamentals, Analog, Linear, and Digital circuits • The ultimate hard-working desk reference; all the essential information, techniques and tricks of the trade in one volume

This practical introduction explains exactly how digital circuits are designed, from the basic circuit to the advanced

system. It covers combinational logic circuits, which collect logic signals, to sequential logic circuits, which embody time and memory to progress through sequences of states. The primer also highlights digital arithmetic and the integrated circuits that implement the logic functions. Based on the author's extensive experience in teaching digital electronics to undergraduates, the book translates theory directly into practice and presents the essential information in a compact, digestible style. Worked problems and examples are accompanied by abbreviated solutions, with demonstrations to ensure that the design material and the circuits' operation are fully understood. This is essential reading for any electronic or electrical engineering student new to digital electronics and requiring a succinct yet comprehensive introduction.

Learn FileMaker® Pro 10 provides an excellent reference to FileMaker Inc.'s award-winning database program for both beginners and advanced developers. From converting files created with previous versions of FileMaker Pro and sharing data on the web to creating reports and sorting data, this book offers a hands-on approach to getting the most out of your FileMaker Pro databases. Learn how to use the completely redesigned Status area, now known as the Status toolbar; send e-mail right from FileMaker with the SMTP-based Send Mail option; build reports quickly and easily with the Saved Finds feature; automate your database with scripts and activate those scripts with the new script trigger feature; integrate your Bento data into your FileMaker files; work with the enhanced Web viewer.

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. For all courses in digital electronics, from introductory through advanced. Like previous editions, this text will be used widely in technology classes ranging from high schools and two-year programs to four-year engineering, engineering technology, and computer science programs. Take a journey in Digital Systems from novice to expert. Written for all courses in digital electronics—from introductory to advanced, from high school to two- and four-year college programs—this Twelfth Edition of Digital Systems thoroughly prepares students for the study of digital systems and computer and microcontroller hardware. The text begins with the basics of digital systems, including the AHDL hardware description language, then gradually progresses to increasingly challenging topics, including the more complex VHDL. The text is comprehensive yet highly readable, clearly introducing the purpose and fundamentals of each topic before delving into more technical descriptions. It is also definition-focused, with new terms listed in each chapter and defined in a glossary. This Twelfth Edition has been thoroughly revised and updated with new material on section-level learning outcomes, Quadrature Shaft Encoders used to obtain absolute shaft positions, troubleshooting prototype circuits using systematic fault isolation techniques, Time Division Multiplexing, expanded discussion of VHDL data objects and more!

Digital Logic with an Introduction to Verilog and FPGA-Based Design provides basic knowledge of field programmable

gate array (FPGA) design and implementation using Verilog, a hardware description language (HDL) commonly used in the design and verification of digital circuits. Emphasizing fundamental principles, this student-friendly textbook is an ideal resource for introductory digital logic courses. Chapters offer clear explanations of key concepts and step-by-step procedures that illustrate the real-world application of FPGA-based design. Designed for beginning students familiar with DC circuits and the C programming language, the text begins by describing of basic terminologies and essential concepts of digital integrated circuits using transistors. Subsequent chapters cover device level and logic level design in detail, including combinational and sequential circuits used in the design of microcontrollers and microprocessors. Topics include Boolean algebra and functions, analysis and design of sequential circuits using logic gates, FPGA-based implementation using CAD software tools, and combinational logic design using various HDLs with focus on Verilog. Using the book and the software provided with it, the reader can build his/her own tester arrangement to investigate key aspects of analog-, digital- and mixed system circuits Plan of attack based on traditional testing, circuit design and circuit manufacture allows the reader to appreciate a testing regime from the point of view of all the participating interests Worked examples based on theoretical bookwork, practical experimentation and simulation exercises teach the reader how to test circuits thoroughly and effectively

The book provides instructions on building circuits on breadboards, connecting the Analog Discovery wires to the circuit under test, and making electrical measurements. Various measurement techniques are described and used in this book, including: impedance measurements, complex power measurements, frequency response measurements, power spectrum measurements, current versus voltage characteristic measurements of diodes, bipolar junction transistors, and Mosfets. The book includes end-of-chapter problems for additional exercises geared towards hands-on learning, experimentation, comparisons between measured results and those obtained from theoretical calculations.

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