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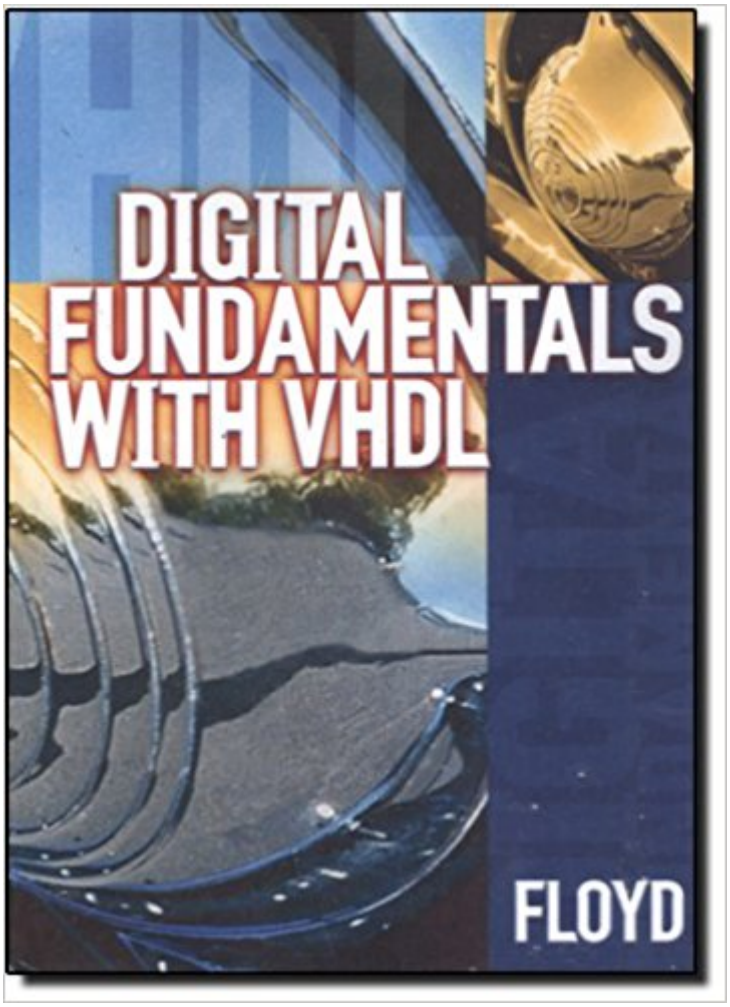
Digital Fundamentals With VHDL



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Synopsis

Adapted from Floyd's best-selling Digital FundamentalsÃ¢â ¬â •widely recognized as the authority in digital electronicsÃ¢â ¬â •this book also applies basic VHDL concepts to the description of logic circuits. It introduces digital logic concepts and functions in the same way as the original book, but with an emphasis on PLDs rather than fixed-function logic devices. Reflects the trend away from fixed-function logic devices with an emphasis on CPLDs and FPGAs, while offering coverage of fixed-function logic for reference. Presents VHDL as a tool for implementing the digital logic in programmable logic devices. Offers complete, up-to-date coverage, from the basic digital logic concepts to the latest in digital signal processing. Emphasizes applications and troubleshooting. Provides Digital System Applications in most chapters, illustrating how basic logic functions can be applied in real-world situations; many use VHDL to implement a system. Provides many examples with related problems. Includes ample illustrations throughout. A solid introduction to digital systems and programming in VHDL for design engineers or software engineers.

Book Information

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Customer Reviews

This text is an alternate version of Digital Fundamentals, the best-selling text which has been recognized as the authority on the fundamentals of digital electronics for nearly a quarter of a . century. If you have used Digital Fundamentals successfully but now need coverage of VHDL and PLDs coordinated with the basic logic fundamentals, this is the text for you, Digital Fundamentals with VHDL provides complete, up-to-date coverage from the basic digital logic concepts to the latest

in digital signal processing. VHDL topics are introduced early and covered in many of the chapters so that the student can learn how to program PLDs with the logic functions covered in the chapter. In addition, Floyd's acclaimed emphases on applications and troubleshooting assist the reader in developing the critical problem-solving skills that are so necessary for working in the field.

This first edition of Digital Fundamentals with VHDL represents an exciting and unique approach to teaching digital fundamentals. The same widely acclaimed coverage of digital technology found in the Digital Fundamentals texts for the past quarter century continues to be the primary focus in this book. Programmable logic devices (PLDs) are presented as the predominate method of logic function implementation, but fixed-function logic device coverage is still retained for reference in the appendix with convenient references throughout the book. VHDL is introduced as the hardware description language of choice for programming PLDs, and its coverage is closely coordinated with the logic functions covered in each chapter. There are VHDL sections in each chapter through Chapter 10, and Chapter 7 is devoted entirely to the topic. VHDL is treated as a means to the end rather than as the end itself, and new topics are introduced gradually as needed. This approach to VHDL allows the student to focus on the basic digital concepts and logic functions, which are of primary importance, without having to deal with the programming language until the basic topics of digital logic are mastered. Then the coverage of VHDL, which is closely related to the basic logic, is presented as a means of implementing the logic functions in PLDs. The student will learn the three basic VHDL approaches for the description of logic circuits and systems: the structural approach, which relates to the schematic of a logic circuit; the data flow approach, which relates to the Boolean description of a logic circuit; and the behavioral approach, which relates to the state diagram description of a logic circuit. The lab manual that is available for this text provides practical experiences in the implementation of logic circuits and systems using VHDL. The experiments closely track the level and topics in this text. Chapters on microprocessors and digital signal processing, as well as a chapter on integrated circuit technology, are included. The IC technology chapter (Chapter 14) can be used as a "floating" chapter or can be omitted entirely. You will probably find more topics in this text than you can cover in a single course. This range of topics provides flexibility to accommodate a variety of program requirements. For example, some of the design-oriented or system application topics may not be appropriate in some courses. Other programs may not have time or their emphasis may not require them to cover microprocessors or digital signal processing. Further, some programs may not need the coverage of integrated circuit technology found in Chapter 14. These and other topics can be omitted or covered lightly without

affecting the coverage of the fundamental topics. A background in electronics is not a prerequisite for this textbook. Major Content Features Basic digital concepts and logic function coverage is the primary focus of the text. Programmable logic devices, including CPLDs and FPGAs, are introduced beginning in Chapter 1 and covered in many chapters. VHDL is introduced and covered in support of the basic logic functions throughout the first ten chapters. Coverage of specific fixed-function logic devices is available in Appendix A with references at appropriate points throughout the text. Digital System Application features with VHDL applications are included at the end of many chapters. An entire chapter is devoted to microprocessors, including standard buses (Chapter 12). An entire chapter is devoted to digital signal processing (Chapter 13). Pedagogical Features Full-color, reader-friendly format. Chapter outline, chapter objectives, introduction, essential term list, add digital system application preview (if applicable) in each chapter opener. Introduction and objectives at the beginning of each section in a chapter. Numerous worked examples, each with a related problem. Review questions at the end of each section in a chapter. Computer Notes interspersed throughout to provide interesting information about computer technology as it relates to the text coverage. Hands-On Tips interspersed throughout to provide useful and practical information. The terms in the Essential Terms list at the beginning of each chapter are highlighted in boldface color and defined at the end of the chapter as well as at the end of the book in the comprehensive glossary. Other glossary terms are in italic. EWB and Multisim circuit files on CD-ROM simulate many of the logic circuits that are illustrated in the text and provide troubleshooting practice at the end of.' each chapter. Margin notes provide condensed explanations or summaries of selected text material. Answer reminders tell the student where to find the answers to the various exercises and problems throughout each chapter. Chapter summaries pull together the key ideas in each chapter. Multiple-choice self-tests appear at the end of each chapter. Extensive sectionalized problem sets include basic problems, troubleshooting problems, VHDL problems, system application problems, and design problems.

Expensive. I'm about to take the class so I can't comment on how good the book is yet.I did want to elaborate on the CD that originally was supposed to come with the book. After receiving a new text without the CD, I started digging if it was the fault of or not. I found that the original publisher decided to stop shipping CDs with the text to cut costs (for them, I highly doubt they passed the savings to the student..) and put the supplemental info on their website to download. Well, now it seems the text was sold to Pearson Publishing (which is another whole rant) [...] and guess what.. they took down the supplemental website.Long story short, check with your instructor and see if you

really need the supplemental material. If you do, try buying your text elsewhere because you will not get it here.Luckily, I did not.

Book was ok, but way too in depth for a 100 level class.

Great book if you read through it. Makes digital logic easy to understand but does take time reading through it.

The book was worthless.It was suppose to come with a Electronics Workbench / Multisim CD. It even said on the side of the book Software included.The book wasn't even shrink wrapped so I think this might have been a return and they tried to resell it as new.I'll reorder the book when they get a fresh shipment in.

The sellers of this book, advertise a low shipping cost. But when you receive the package you are going to be surprised by the extra shipping charge that the Post Office is going to lay on you. That's right this seller stuffs this book into a small flat rate envelope that exceeds the size limitations. So the post office turns around and charges you the recipient. Of course you can deny picking it up, but if you're like me and need this book for school, you really have no time to send it back. My advice, only buy a book when stocks it, otherwise will do nothing to get your money back as in my case.

Very easy to read and a good introduction to digital logic circuits. Too many books on VHDL try to teach the hardware design language assuming the reader knows how each of the logic circuits are modelled or the books skimp over timing issues. This book takes the time to show you how logic circuits operate, how timing works and then gives you the VHDL scripts to model the circuit. Though not particularly advanced with the projects that are presented in the book, I do like the emphasis on timing and troubleshooting circuits. Definately not a reference for the intermediate or advanced digital designer, but a good book to get you started thinking about how VHDL relates design process. The book loses a star for its overly simplistic coverage of CMOS and DSP technology. Get another book for that.

I ordered the book for class because the book was required. The second that I had the book I was instantly upset with this requirement that I never actually needed. There are much better substitutes. The book camera moderately damaged (no more than I would expect from a used book). My main

problem is that I made sure that I ordered the one with the CD and there was no CD. I love ordering from but will most likely never order a physical book from them again because of this experience.

this is one of the terible book that i ever have in my life. This book i would say it is belong to digital terminology rather.

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