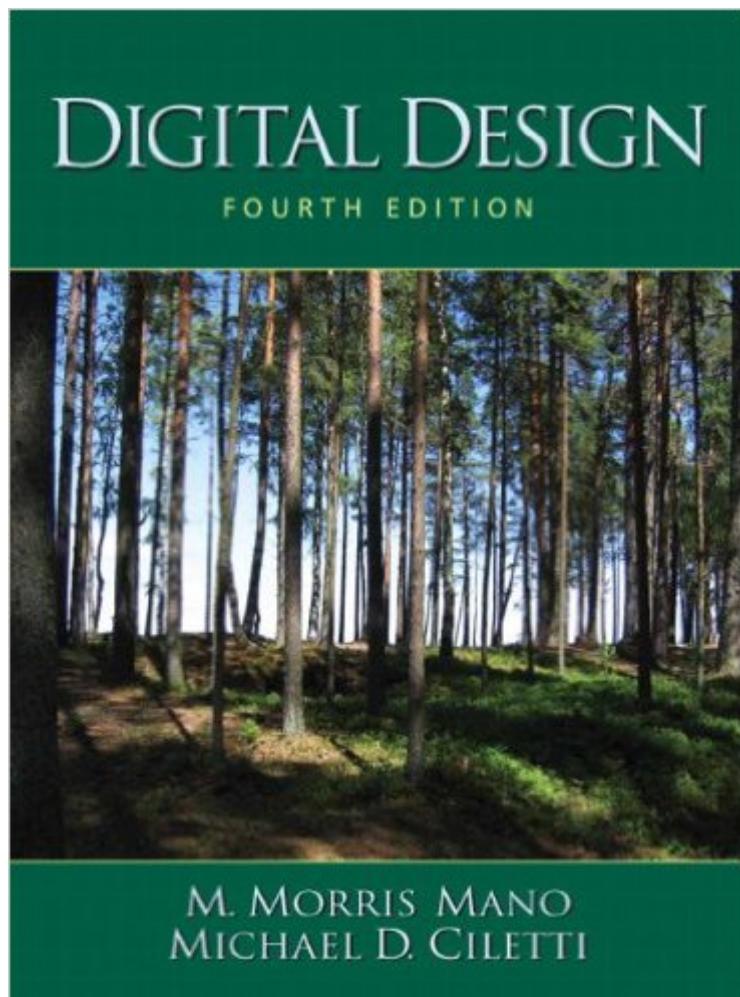


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# Digital Design (4th Edition)



## Synopsis

For sophomore courses on digital design in an Electrical Engineering, Computer Engineering, or Computer Science department. *Digital Design*, fourth 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.

## Book Information

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## Customer Reviews

This book gives a good coverage of digital design. It includes: The basics (binary, octal and hexadecimal numbers, two's complement); boolean algebra and its relationship to logic gates; simplification of Boolean functions and NAND/NOR implementation; adders (half, full, carry lookahead, parity generation) and encoders/decoders; PLD's; synchronous design: state machines, counters, shift registers; asynchronous design (race conditions, hazards), characteristics of digital integrated circuits (TTL, ECL, CMOS) and a bunch of proposed lab experiments. I found the book to be plenty of information relative to its size. The issues are presented clearly, and I didn't find any bugs in the book. Some of the data presented (like asynchronous design) are difficult to find in other reference books. However, I was not sure if it deserved the 5 stars. The book doesn't cover today's hot issues like low voltage families (3.3V and below), and it also does not have any reference to HDL (Verilog, VHDL). The presented PLD's and logic families are today almost obsolete. But all in all, it is an excellent reference on digital design.

In first year engineering at Simon Fraser University, many of my classmates and I absolutely hated Mano's other text, "Logic and Computer Design Fundamentals (2nd ed. updated)". However since I have picked this text up I have found Mano to be much easier to read, but that could be because I have adjusted to the material and his writing style. Unfortunately there are no solutions to any of the exercises in this text, only selected answers. His other text has some solutions posted on the companion site ([...]) you may be able to use them to learn from with this text as well. And there are little mistakes in the text that may make things difficult to understand at first, but I did find a decent errata on the web ([...]). I don't know how good the text is for self-teaching, but it isn't bad for brushing up on the basics after being away from digital design for a couple years.

This book is an excellent companion to computer science/computer engineering classes. It tends to be fairly short and concise for almost every topic, which is why I would only recommend this book to those who really need it (required). Without guidance the concepts of digital design, especially as presented here, will no doubt escape people quickly. There is a couple errors in the book, which can be expected when they have to include data from external sources such as block diagrams for integrated circuits. If you need this book for a college CS/CE/EE intro course no doubt the book, you, and your professor will have a lot of fun with some basic computer engineering and labs, BUT, as a self-study or reference, I do not recommend, at all. I have used this book for a computer science course at MN State, and while everything has gone very smoothly, it's only because collaboration with a professor has smoothed out the bumps and even filled in minor gaps or shown alternate methods.

This book was used by me and still being used by me in designing complex Logic Circuits. The questions given to every end of a chapter are very challenging and helpful in application of recently learned lessons and previous lessons. The explanation of Karnaugh Mapping and Complex Devices can be easily understood. A book like this is a treasure for me.

This book has been on the market for many years (which in itself seems like a good sign), and when it comes to learning the fundamentals of digital design, it is hard to find a better reference. The book's strong points include a number of good examples in each chapter, and plenty of problems that seem quite reasonable for a beginning student to solve. My only criticism may be the absence of a chapter on VHDL, which would probably have more use than some of the other topics (such as

the various types of logic families) discussed towards the end of the book.

This book has multiple mistakes in every chapter. This subject is new to me, and this was the assigned textbook for my digital electronics class. Multiple times my classmates and I would be left confused as the content our teacher would teach would occasionally clash with the material in the text. In addition, as a beginner I was able to find simple mistakes everywhere (this would carry over to the solutions manual as well; many problems have an incorrect truth table and an answer that would be correct for the incorrectly derived truth table, but wrong overall). If I'm finding mistakes as a beginner on the subject, then there's something seriously wrong here. If this was a 1st or even 2nd edition of this book, then I would be less harsh on it. This is the 4th edition, and there are this many mistakes in it? This is not worth your money.

Firstly, I will say that this is a great book. I'm a computer engineer and when I was a freshman in college this was our introductory book. This book covers the aspects of digital design and essential components very well. Not only is the coverage great in this respect, but is very readable. I'm a tech head and, to be honest, I loved reading this book. No qualms about the authors' writing styles. The only issue I had with this book was with the HDL examples. The HDL examples were code with virtually no explanation. In my opinion, this is very useless considering it is an introductory book into the world of digital design and computer engineering. HDL is definitely not this book's strong point, but for the fundamental concepts of digital design, it's a great book. I keep my copy on my bookshelf and don't plan on selling it.

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