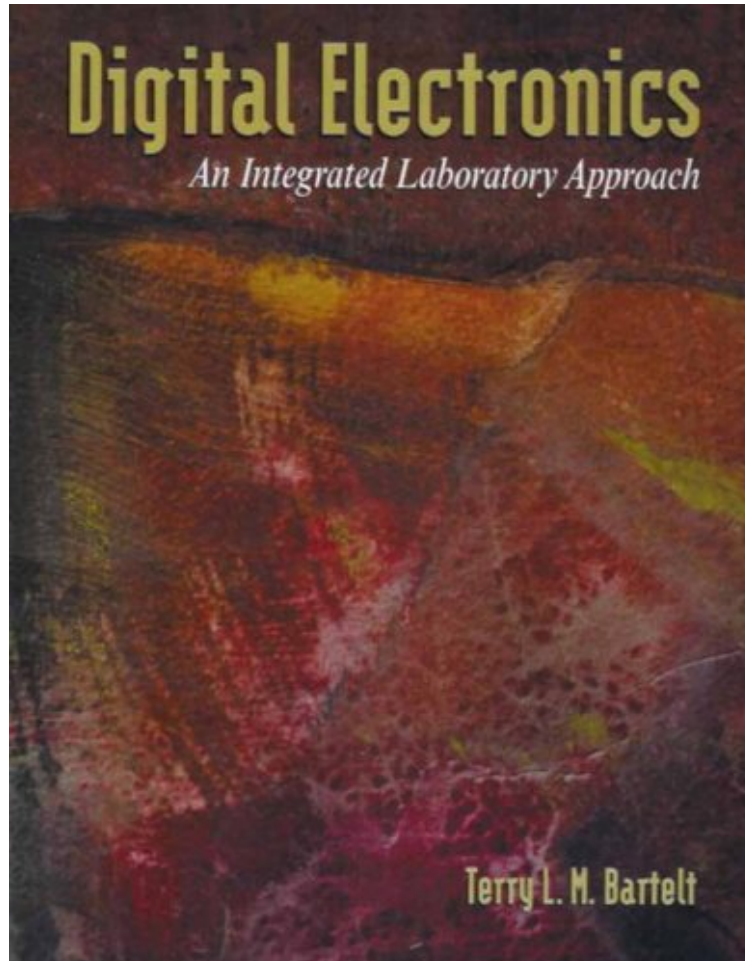


(Mobile ebook) Digital Electronics: An Integrated Laboratory Approach

Digital Electronics: An Integrated Laboratory Approach

Terry L.M. Bartelt

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Terry L.M. Bartelt : Digital Electronics: An Integrated Laboratory Approach before purchasing it in order to gage whether or not it would be worth my time, and all praised Digital Electronics: An Integrated Laboratory Approach:

This introductory book explains, with completeness and clarity, how components and circuits are used in practical digital devices. It also describes any digital components or circuits that exist in integrated-circuit form. Chapter topics cover digital number systems, basic logic gates, Boolean algebra, combination and integrated circuits, basic storage elements: latches and flip-flops, counters, registers, arithmetic circuits, conversion devices and circuits, memory devices, and functional digital circuits. For individuals new to the electronics field, and for military personnel as a self-study reference.

From the Back Cover Few educators would argue the claim that today's students learn by doing. That's what Bartelt's Digital Electronics text is all about. Students are introduced to the basics of digital electronics through a conversational writing style and examples with which they can actually work. Each chapter includes examples of digital theory in action by utilizing the popular and powerful Electronics Workbench software. Circuit files for each example are found on the CD that is packaged with the instructor's manual. About the Author Terry Bartelt is a long-time educator and author in the Electronics Technology field. He currently teaches at Fox Valley Technical College in Wisconsin. Excerpt. Reprinted by permission. All rights reserved. This book is an introductory text for students new to the electronics field. Before using the text, students should have had a course in DC circuits; and while using it, students should be concurrently enrolled in a basic solid-state electronics class. This text can be the basis for a one- or two-semester course in digital electronics at the vocational school, technical school, or community college level, and in industrial education at the university level. It is also appropriate for students enrolled in continuing education evening courses and for advanced high school students studying digital electronics. With a background in individualized instruction, the author has taken great care to describe the concepts completely and with clarity, making the book also appropriate for book club members, for military schools, and as a reference in self-study courses. Because each chapter of the book builds on information presented in the preceding chapter, it is important that the reader comprehend the initial material before advancing to the more difficult material covered in later chapters. The exception is chapter 4 on Boolean algebra. This chapter is designed to be studied either in the numerical sequence where it is placed or at the end of the book, or it may be deleted. Each chapter begins with a list of objectives and concludes with a summary and end-of-chapter problems. Illustrative examples and review questions are placed throughout each chapter for consistent reinforcement and the figures are designed to enhance the explanation of the concepts. Explanations about the use of components and circuits in practical digital devices are provided to give the reader a better insight and understanding. Many of the digital components or circuits in this book also exist in integrated circuit form. These ICs are included and their operation is described in detail. To reinforce the theory of digital components and circuits, there are 31 experiments included in the book. All of these lab activities have been class tested and can be performed on protoboards. A test file that contains exams for each chapter is provided with an answer key in an instructor's guide. The guide also has answers to all the review questions and chapter problems in the text, and solutions for all the laboratory experiments. The author has constructed some of the circuits for the laboratory experiments on the simulation software product produced by Electronics Workbench (MultiSim). These circuits are provided on a CD-ROM that accompanies the instructor's guide. An appendix on troubleshooting procedures and test equipment used for defective digital circuitry is included. The last section of all but two chapters describes troubleshooting principles that apply to the types of circuitry covered in each chapter. Chapter problems include exercises to help the reader envision and experience the troubleshooting process. The last chapter explains how circuits described throughout the book can be used in the construction of functional digital equipment. I wish to thank the reviewers of the manuscript: Terry Collett, Lake Michigan College; Richard Skelton; and Ray Williams, Tennessee State University. I would like to express my appreciation to my colleagues and students who have given me assistance and feedback during the development of the text. I would also like to acknowledge my editor, Scott Sambucci, and Holly Henjum from Clarinda Publication Services. Special thanks to my wife Carol for her patience and support during this long project. Terry Bartelt