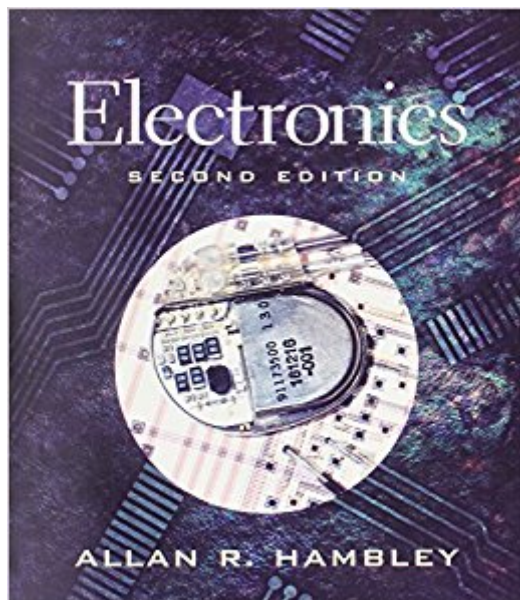The book was found

Electronics

Synopsis

The book provides a wealth of readily accessible information on basic electronics for electrical and computer engineering. The introduction and treatment of external amplifier characteristics has been condensed into the first chapter, op amps are treated in a single chapter, and treatment of device physics has been shortened and appears in various chapters on an as-needed basis. For anyone who wants an introduction to electronics.

Book Information

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Customer Reviews

Preface This book is intended for use in the core electronics courses for undergraduate electrical and computer engineering majors. The book frequently takes the designer's point of view in discussing circuits, illustrates design with numerous examples, shows how to test circuit designs using SPICE, and provides numerous open-ended design problems with which students can practice. WHAT'S NEW IN THE SECOND EDITION The entire book has been reorganized and rewritten with an eye toward reducing its length and making it more student friendly. Integrated-circuit techniques are treated earlier and receive greater emphasis throughout. The needs of computer-engineering students are addressed by treating the switching behavior of devices early in the book, adding a chapter on CMOS logic circuits, and adding a discussion of data converters. Several motivational examples are provided in the "Anatomy of a Design" sections as asides from the main text to show how interesting circuits can be designed using the material learned to that point in the book. For example just after the chapters on op-amps and diodes, the

design of a function generator is illustrated. The introduction and the treatment of external amplifier characteristics have been condensed into the first chapter. MOSFETs are emphasized over JFETs. Op-amps are treated in a single chapter. The treatment of device physics has been shortened and appears in the various chapters on an as needed basis. The chapter on SPICE has been eliminated because most students learn to use SPICE in their circuits courses. ASSUMED BACKGROUND AND LEVEL OF PRESENTATION The background assumed is a first course in circuit analysis. In the beginning, the level of presentation is appropriate for an introductory core course. Starting with Chapter 7, the level gradually increases to that appropriate for juniors having a stronger interest in the subject. Circuit analysis by Laplace transform methods is helpful (but not required) background for frequency response and compensation of feedback amplifiers in Chapter 9. INSTRUCTIONAL AIDS A website located at prenhall/hambley contains a number of resources for instructors and students including: Answers to selected end-of-chapter problems PDF files of key figures from the book that can be used to make transparency masters Schematic files for the circuits discussed in the book Schematic files that are the answers to Exercises that call for SPICE analysis A selection of links to manufacturers' sites where additional data may be downloaded A solutions manual containing complete solutions for the exercises and problems is available to instructors who adopt the textbook for classroom use. To obtain a copy, contact your local Prentice Hall sales representative or write to the publisher on your school letterhead. The address of the publisher is: Electrical and Computer Engineering Editor Prentice Hall 1 Lake Street, Upper Saddle River, NJ 07458 CONTENT This book supports a wide variety of course plans. More than enough material is provided for a two-semester (or three-quarter) course sequence, allowing topic selection suited to the interests of the instructor and students. Chapter 1 contains an overview of electronics and treats the external characteristics of amplifiers. The first several sections acquaint students with the big picture and illustrate how the details studied in this book fit into that picture. Usually, I assign this material for reading but don't spend class time on it. Next, we introduce basic amplifier concepts including gain, input resistance, output resistance, frequency response, and circuit models for amplifiers. The chapter concludes with a discussion of differential amplifiers, setting the stage for op-amps. Chapter 2 treats operational amplifier circuits including basic amplifiers, imperfections of op-amps, integrators, and differentiators. The discussion of amplifiers gives immediate application for the concepts (that were introduced in Chapter 1) of gain, input resistance, output resistance, and ideal amplifier types. Chapter 3 treats diodes and diode circuits, including load lines, ideal diodes, rectifiers, wave shapers, logic circuits, voltage regulators, device physics, and switching behavior. The small-signal-equivalent-circuit concept is introduced in Section 3.8 setting the stage for BJT and

FET amplifier analysis. "Anatomy of a Circuit Design: A Function Generator" is set aside from the main text and appears between Chapters 3 and 4. It shows students how the material from the first three chapters can be used in designing a useful and interesting circuit. Chapter 4 covers BJT characteristics, load-line analysis, large-signal models, biasing, small-signal equivalent circuit analysis, the common-emitter amplifier, the emitter follower, and use of the BJT as a switch in logic circuits. Chapter 5 contains a similar treatment of FETs with the main emphasis on MOSFETs. If desired, the order of Chapters 5 and 6 can be reversed with little difficulty. "Anatomy of a Circuit Design: A Multistage Amplifier" appears immediately after chapter 5 and illustrates how a multistage amplifier can be designed using what was learned from Chapters 4 and 5. Chapter 6 treats digital logic circuits with very strong emphasis on CMOS. Basic logic circuit concepts, the resistor-pull-up NMOS inverter, the CMOS inverter, propagation delay, NOR and NAND gates, dynamic logic, and transmission gates are covered. Differential and multistage integrated amplifiers including IC bias techniques are treated in Chapter 7. Chapter 8 covers amplifier frequency response, including the Miller effect, the BJT hybrid model, and common amplifier configurations. Chapter 9 examines feedback and oscillators. Sections 9.1 through 9.4 deal with types of feedback and their effects on gain and impedances. Then several design examples are given in Section 9.5. Sections 9.6 through 9.9 treat transient response, frequency response, and compensation of feedback amplifiers. Several examples of feedback amplifiers are discussed in Section 9.10. Finally, oscillator principles are discussed in Sections 9.11 and 9.12. "Anatomy of a Circuit Design: A Cardiac Pacemaker" appears after Chapter 9 and shows an interesting application of many of the circuits and concepts discussed in the book. Output stages and power supplies are presented in Chapter 10 including thermal considerations, power devices, Class A and B amplifiers, linear voltage regulators, and power-supply design. Chapter 11 treats active filters, tuned circuits, impedance-matching networks, LC oscillators, and crystal oscillators. Chapter 12 considers comparators, timer circuits and data converters, including the Schmitt trigger, multivibrator circuits, the 555 timer IC, digital-to-analog converters, and analog-to-digital converters. Finally, "Anatomy of a Circuit Design: A Precision AC to DC Converter," illustrates another practical design using many of the concepts treated earlier in the book. CHAPTER DEPENDENCY The first five chapters form the foundation upon which the remainder of the book rests. The order of coverage of the remaining chapters is extremely flexible. Chapter 5 on MOSFETs can be covered before Chapter 4 on BJTs if desired.

The book provides a wealth of readily accessible information on basic electronics for those interested in electrical and computer engineering. Its friendly approach, clear writing style, and realistic design examples, which earned Hambley the 1998 ASEE Meriam/Wiley Distinguished Author Award, continue in the Second Edition. FEATURES/BENEFITS   NEW—Refines and reorganizes chapter content. The introduction and treatment of external amplifier characteristics has been condensed into the first chapter; op amps are treated in a single chapter; and treatment of device physics has been shortened and appears in various chapters on an as-needed basis. Avoids overloading beginners with unnecessary detail, making the book more succinct and user friendly. NEW—Provides early treatment of integrated-circuit techniques with greater emphasis throughout.   Enabling readers to gain knowledge of integrated circuits without taking an advanced course. It also integrates the concepts, rather than presenting them in piecemeal fashion. NEW—Emphasizes MOSFETs over JFETs.   Preparing the reader for advanced study of analog and digital CMOS and IC's.   Offers outstanding pedagogical features throughout. Chapter opening material shows the reader how each chapter is organized. Example titles allow the reader to easily locate examples related to a particular topic. Margin comments summarize procedures and emphasize important points. Treats digital circuits early in the book. Emphasizes design. For example, Anatomy of Design sections show realistic design examples. Demonstrates ways in

which material fits together, providing motivation and creating interest.

Product itself: Good condition. No issues.Contents of the book:Pros:- Good chapter flow; starting from core and basics to advance topics.- lots of graphical and non-graphical examples.-Good intro section to all topics.Cons:-Important equations and constants are sometimes omitted or vaguely mentioned. (i.e. constant Vt is mentioned once or twice and it's hard to figure out what it is as you can't find it in index or glossary.)-I did not like the fact that the book made things harder than they really are. For example, Common emitter voltage amplifier is an inverting amplifier that amplifies both the current and the voltage. If we added a feedback resister, the gain of the amplifier will be dependent on R(common) and R(feedback). The book will not tell you this. It will simply show you a diagram with no clear explanation. In some examples you see R(feedback) and sometimes you don't. Without R(feedback) the gain is based on bias forwarding but the book fails to explain anything to the learner. So if you didn't know or look elsewhere you may never know the reason behind R(Feedback).Conclusion: The book is not the worst book I've come across but not good either. The book is ok for those who have prior knowledge about circuits and circuit components. But for intro students or learner, this book often does a bad job of explaining diagrams and models. It often does not give you the main points to its configuration and topics either.

There are much better electronics books out there. But this one generally does the job and matched up with the book my professor listed on her syllabus. It also has the answers to it's problems available online (with some dedicated research), so there's definitely a bonus there.

Although it does hold together better than Angel Soft, it is definitely not as good as Charmin. One Star!

My favorite textbook as a EE student in college.

This book is so accurate in the description.

Topics are not well-put in this textbook. It is not really helpful. There are much better electronics books out there.

I didn't really have any feelings about this book one way or the other when I used it last semester for

my first semester of electronics. Even though this semester I am in basically part II of that course, we have to pick up in the middle of Sedra & Smith. Sedra & Smith is insane. It might work well for grad students who need to know EVERY LITTLE DETAIL, but my professor picks and chooses out of it and teaches basically just what's in Hambley! and in almost the same order! Why we aren't using Hambley I don't know but I wish we were. I use Electronics to study then begrudgingly go to the overworked, tightly packed mess that is Microelectronic Circuits for homework problems.Now.. a con for Hambley: a little too much reliance on PSpice to get a point across. We rarely used PSpice in class and the student version I got from Orcad didn't really match up to Hambley's. I find that I can barely follow a lot of the PSpice instructions in Hambley anymore because of too many version changes. (It's easier at school where we use the same version.)

This book was required for my electronics class and the only thing it helped me learn was using PSPICE. The explanations of the operations of different devices are not thorough enough. I ended up using the Sedra/Smith Microelectronics for learning the different concepts. I used this book for only required homework problems. I would recommend Sedra/Smith, Microelectronics, for a complete and thorough introduction into electronics and semiconductor devices.

Shocking! Where Does Electricity Come From? Electricity and Electronics for Kids - Children's Electricity & Electronics Digital Electronics: A Primer : Introductory Logic Circuit Design (Icp Primers in Electronics and Computer Science) Hacking Electronics: Learning Electronics with Arduino and Raspberry Pi, Second Edition Scaling and Integration of High-Speed Electronics and Optomechanical Systems (Selected Topics in Electronics and Systems) Science Fair Projects With Electricity & Electronics: Electricity & Electronics Extreme Ultraviolet Lithography (Electronics) The Weekend Navigator: Simple Boat Navigation With GPS and Electronics Boat Navigation for the Rest of Us: Finding Your Way by Eye and Electronics A Small Boat Guide to Electronics Afloat Electronics Concepts, Labs, and Projects: For Media Enthusiasts, Students, and Professionals (Music Pro Guides) Guitar Electronics for Musicians Guitar Electronics for Musicians (Guitar Reference) Getting Started with Adafruit FLORA: Making Wearables with an Arduino-Compatible Electronics Platform Electronics 1 Part 1 (Quickstudy: Academic) Electronics 1 Part 2 (Quickstudy: Academic) Fight Your Own War: Power Electronics and Noise Culture Michael Faraday: Father of Electronics Digital Filmmaking for Beginners A Practical Guide to Video Production (Electronics) Make: Lego and Arduino Projects: Projects for extending MINDSTORMS NXT with open-source electronics 3D Printing and CNC Fabrication with SketchUp (Electronics)