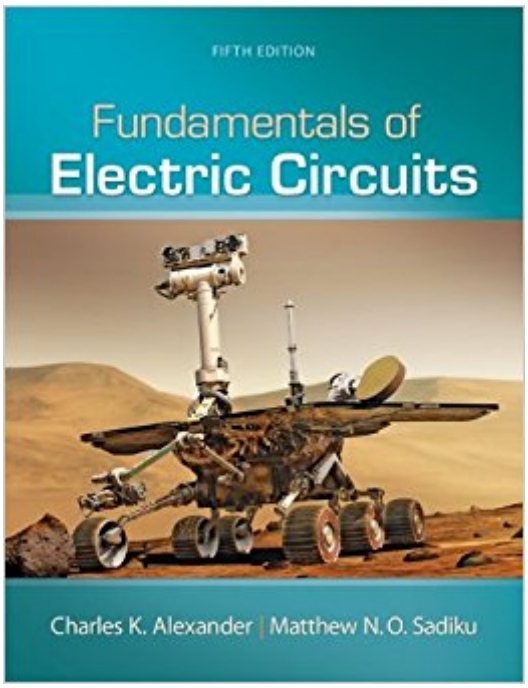
Fundamentals Of Electric Circuits



Synopsis

Alexander and Sadiku's fifth edition of Fundamentals of Electric Circuits continues in the spirit of its successful previous editions, with the objective of presenting circuit analysis in a manner that is clearer, more interesting, and easier to understand than other, more traditional texts. Students are introduced to the sound, six-step problem solving methodology in chapter one, and are consistently made to apply and practice these steps in practice problems and homework problems throughout the text. A balance of theory, worked examples and extended examples, practice problems, and real-world applications, combined with over 468 new or changed homework problems for the fifth edition and robust media offerings, renders the fifth edition the most comprehensive and student-friendly approach to linear circuit analysis. This edition retains the Design a Problem feature which helps students develop their design skills by having the student develop the question as well as the solution. There are over 100 Design a Problem exercises integrated into the problem sets in the book.

Book Information

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Customer Reviews

Dr. Charles K. Alexander is a Professor of Electrical and Computer Engineering at Cleveland State University, Cleveland, Ohio. He is also the Director of the Center for Research in Electronics and Aerospace Technology (CREATE). From 2002 until 2006 he was Dean of the Fenn College of Engineering. He has held the position of Dean of Engineering at Cleveland State University, California State University, Northridge, and Temple University (acting Dean for six years). He has

held the position of Department Chair at Temple University and Tennessee Technological University as well as the position of Stocker Visiting Professor (an Endowed Chair) at Ohio University. He has held faculty status at all of the aforementioned Universities.Matthew N. O. SadikuÃ Â received his PhD from Tennessee Technological University, Cookeville. From 1984 to 1988, he was Assistant Professor at Florida Atlantic University, where he did graduate work in Computer Science. From 1988 to 2000, he was at Temple University, Philadelphia, Pennsylvania, where he became a full Professor. From 2000 to 2002, he was with Lucent/Avaya, Holmdel, New Jersey, as a System Engineer and with Boeing Satellite Systems as a Senior Scientist. He is currently a professor at Prairie View A&M University.

Since the reviews for most of the other first Circuit Analysis books I could find were fairly uniform in their negative opinion on the understandability of those books, I was worried about this book. But, since the reviews of the previous version were very good, I thought I'd give it a try. Basically, I'm very impressed with it. Since I'm working through the book on my own without any peers or professors available to clarify things, the book I use HAS to be readable. This one is. The authors clearly explain almost everything (there are a few minor omissions of (non-core) material that the authors consider to be Intuitively Obvious to the Most Casual Observer (i.e., stuff they thought everyone would have run into from everyday life)). Within each section of each chapter, they immediately follow every concept with several Examples showing how to work with the material and Practice problems for the reader to do. So, if you don't immediately understand the theory, there are several applications available to help you along. At the end of the chapter, the book includes:- A Summary of the material covered.- Answered Review Questions.- About 100 Exercises. These are broken up into sections so you know which ones require what material. The odd ones are answered at the back of the book.- Comprehensive Exercises which use all the material covered.In the Preface, the authors describe the book as:"...[W]ritten for a two-semester or three-quarter course in linear circuit analysis.... It is broadly divided into three parts. Part 1, consisting of Chapters 1 to 8, is devoted to dc circuits.... Part 2, which contains Chapter 9 to 14, deals with ac circuits.... Part 3, consisting of Chapters 15 to 19 is devoted to advanced techniques for network analysis.... [T]he main prerequisites... are physics and calculus. A very important asset of this text is that ALL the mathematical equations and fundamentals of physics needed by the student are included in the text."From what I can see, that's a very good description of the book.The only negatives I can find in the book are all minor. Occasionally, there's a wrong answer (AFAIK). There are also a couple of cases where the authors put new information into the exercises instead of covering it in the text.

Slightly more serious is that in some cases the Example and Sample problems focus on problems with certain attributes. But, the Exercises will then focus on problems with entirely different (unexplained) attributes. It takes some work to translate these into the material covered in the section. Also, I'd have preferred having Exercises at the end of each section instead of clumped together at the end of the chapter. The end-of-chapter Exercises should be limited to the Review Questions and Comprehensive Exercises. It would also have been nice if McGraw Hill had provided a PDF version of the book on their web site (ARIS) for registered users (there's a registration code in the front of the book).My biggest complaint is probably regarding the tools used in the book: PSpice (a circuit simulator), KCIDE (an integrated design environment for circuit analysis), and MATLAB (a symbolic manipulator and solver). PSpice 9.1 used throughout the text of the book. Unfortunately, KCIDE uses PSpice 10.0. From what I can find on the web, the two PSpice versions don't play nicely together. So, you really have a choice of using the version of the tool used in the book or using the version required by another tool used in the book. MATLAB, unlike PSpice and KCIDE, doesn't have a free student version. As a replacement for it, I used Maxima (available from SourceForge).Still, all the complaints are minor. I found the book to be very readable and rate it at a Very Good 4 stars out of 5.

Compared to Nilsson and Riedel, this linear circuits text makes it fun to learn! The schematics and diagrams are attractive and memorable. Circuit diagrams are colored coded which help the novice separate the circuit components into different types and functionality. Nilsson uses all black lines which to me are not definitive enough. The authors' descriptions of common analog components such as the resistor, capacitor, inductor, and voltage sources are interesting and help supplement the macroscopic perspective used in solving and understanding linear circuit problems. The problem sets become a little repetitive after awhile but certainly reinforce the concepts. The math involved with solving large sets of simultaneous linear equations by hand quickly becomes cumbersome. I highly recommend a programmable/graphing calculator or mathematics software like MatLab to help solve problems. Helpful appendices are included on trigonometry, complex numbers, and matrices/linear algebra. I highly recommend this text to engineering students.

There are so many issues, I don't know where to begin...1) There are many graphics and tables with identification numbers that it becomes confusing. For example, in the problems sections, the ID numbers for the graphics are bigger (and different) than the problem numbers, so it is easy to be looking for a particular problem, find the number, then realize that you found an image with that

number, not the actual problem you want.2) Often there are 2 different techniques shown for solving problems, but the delineation between the 2 isn't clear.3) The majority of the fully worked out sample problems are pretty simple. Then there are problems that are very difficult, for which there is no clue as to where to begin.I ended up going to the library and checking out a couple of additional books that did a better job of filling in the gaps (that weren't so wordy and distracting).

I only bought it because my college is using it, but honestly, the explanations are pretty bad, and in examples, they skip so maybe steps, which make you think, "How the heck did they go from this step to that step." A concept that I was confused about in this book was better explained to me in a physics book that only had electric circuits as a single chapter out of the whole book. It's still decent, though. I don't recommend the book.

I actually sold this version for the latest version of this textbook, but it's almost identical save for a few differences (a few changed chapter problems, etc.). It is excellent: each chapter discusses the concepts in great detail, and the examples it provides are interactive enough for any learning student to grasp the concepts.Example problems within the chapters have their answers included so that you can make sure you're doing things correctly. All in all, this is a good textbook.

Coverage of elementary circuit theory is encyclopedic. For someone who needs a quick refresher here and there, this is great. Sections are relatively short without long chains of reasoning-easily digestible bites. You'll get most of the needed framework in the first four chapters which cover Kirchoff's Laws (mesh or loop and nodal or junction analysis), superposition for linear circuits, source transformation, Thevenin and Norton theorems. Later on in a.c.circuit theory these same ideas hold since linearity holds for a fixed frequency. Complex impedances take the place of resistances and everything goes the same. The linearity of a circuit will allow you to Fourier analyze an arbitrary input voltage into a sum of a.c. voltages at various frequencies, solve for output voltage at each frequency, and sum these results to get your output-you can compare on an oscilloscope. Topics nicely build on previous results. After the basics you can just about jump anywhere and get the gist of the discussion.

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