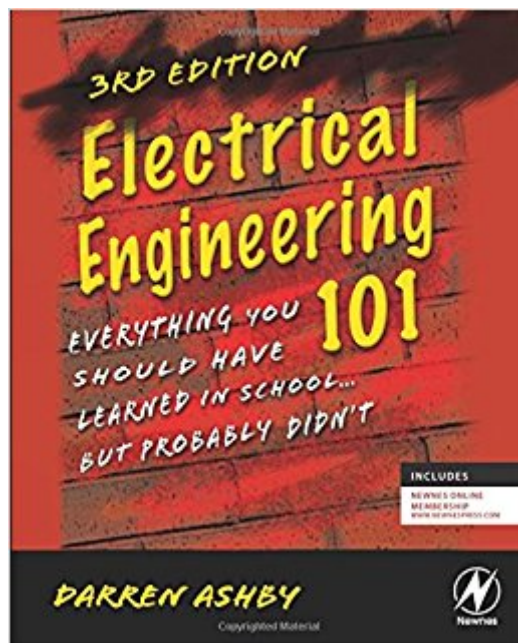




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# Electrical Engineering 101, Third Edition: Everything You Should Have Learned In School...but Probably Didn't



## Synopsis

Electrical Engineering 101 covers the basic theory and practice of electronics, starting by answering the question "What is electricity?" It goes on to explain the fundamental principles and components, relating them constantly to real-world examples. Sections on tools and troubleshooting give engineers deeper understanding and the know-how to create and maintain their own electronic design projects. Unlike other books that simply describe electronics and provide step-by-step build instructions, EE101 delves into how and why electricity and electronics work, giving the reader the tools to take their electronics education to the next level. It is written in a down-to-earth style and explains jargon, technical terms and schematics as they arise. The author builds a genuine understanding of the fundamentals and shows how they can be applied to a range of engineering problems. This third edition includes more real-world examples and a glossary of formulae. It contains new coverage of: MicrocontrollersFPGAsClasses of componentsMemory (RAM, ROM, etc.)Surface mountHigh speed designBoard layoutAdvanced digital electronics (e.g. processors)Transistor circuits and circuit designOp-amp and logic circuitsUse of test equipmentGives readers a simple explanation of complex concepts, in terms they can understand and relate to everyday life. Updated content throughout and new material on the latest technological advances.Provides readers with an invaluable set of tools and references that they can use in their everyday work.

## Book Information

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## Customer Reviews

From .com reviews: "This is a great book because the author is taking basic theory and providing the reader with some good intuitive tools to gain a foothold on how components work. Many textbook authors in the circuit analysis arena (or electrical engineering as a broader area) tend to do one of 3 things: a) Over explain a concept until the reader loses track of what he is doing b) Skip too many steps in showing the derivation of a formula or the solving of a problem. c) Place more emphasis on the mathematics associated with specific problem rather than the problems significance. The author clearly avoids these traps. His text is reminiscent of a bygone era where engineering books actually sought to explain concepts and their significance." "I would recommend this book to anyone interested in electronics. This book helped me understand concepts that I struggled with in class and for years after school." "This is what more educational institutions need - someone who can take a subject and simplify it so that it is easy to recall. I have a BSEE and these topics were always taught from just a mathematical standpoint. The author takes the subject and teaches it in a way that is easily memorable." "My background is Mechanical Engineering and I found this book to be extremely useful and interesting. I purchased this book in order to get a better understanding of the EE basics. Like most universities a ME takes an EE 101 course that is essentially a weed out course. The problem with a weed out course is that in the end you don't have a solid understanding of what the underlying basics are. If this sounds familiar, you should definitely buy this book." "This book is an easy read after you've gone through EE. Makes you see the forest from the trees. Spend so much time in early circuits classes just trying to figure out currents, gains and voltages that all I could do was the math (the trees). This book has helped not only to review concepts, but to help me see what these components are doing (the forest). Enjoying the book." "I enjoyed this book very much. I especially liked the software on the CD, which had nice tools to work with. I enjoyed the clarity in the writing and the informal style. I was having trouble grasping concepts in some of the more formal books on EE, which made it sound more like magic than science. The way the author related EE concepts to mechanical ones helped tremendously. I recommend this book highly, if you are new to electronics."

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giving the reader the tools to take their electronics education to the next level. Darren Ashby builds a genuine understanding of the fundamentals and shows how they can be applied to a range of engineering problems. This third edition includes more real world examples and a glossary of formulae. It contains new coverage of microcontrollers, FPGAs, memory, surface mount, high speed design, board layout, advanced digital electronics, use of test equipment and transistor, op amp and logic circuits and circuit design.

I've gone through literally dozens of books on the topic of Electronics and this is the FIRST to explain WHY everything is what it is. Because the author does a tremendous job drilling down on the fundamentals, and expanding on the basic principles, we can then begin to understand as to how it all relates to more advanced topics. I have not yet seen a book on this subject that came even close to really explaining what electricity really is, and what it means to problem solve. Common sense is no more common than paper bags but this book will teach you common sense if you don't have it and leverage the common sense that some do have. I can't emphasize this enough...DO YOURSELF A FAVOR AND BUY THIS BOOK. I plan to reread it as many times as it takes to commit to memory. The Fundamentals are all here and explained in an interesting and systematic process that helps to understand what is really going on with building/testing/troubleshooting circuitry.

This is a gem that needs to be kept on your bookshelf. I absolutely love this book. The Chapter that I enjoyed the most was CH 4 "The real world". Although most of what in the book I learned in my undergrad, Darren's advice on remembering the basics is about the best advice in the book. As a first year EE in the workforce as long as you understand the basic concepts of the technical aspect of your job you will excel. I can honestly say that although knowing the theory is good, it's not quite as good as knowing intuitively why something happens. The other chapter I enjoyed was CH 7. Darren gives some pretty good advice on people to avoid at your job and some pretty good managerial tips. Maybe I need to tell my boss to read that chapter who's not an engineer!

I wish I could read the formulas without a magnifying glass! The formulas, for whatever reason, on a Kindle (I have Kindle Keyboard and Kindle Fire HD) are too small to read. I can use a magnifying glass on the Kindle Keyboard, with the Fire some are still unreadable. In my opinion Newnes should update the formulas and re-issue the book. Newnes has a number of pricey Kindle offerings, all engineering related, it just seems odd that \*this\* publisher would have such basic formatting errors.

The cover of the book indicates that it contains everything you should have learned about in school but probably didn't. I am a mechanical engineer and even I learned most of what the book covers in school. I had hoped that the book would give me better insight to electric circuits, specifically: typical behavior of common circuits. I was particularly disappointed with the section that covered op-amps. Not once did it mention op-amp power supplies (bi-polar or uni-polar). The book covered basic filters in BRIEF detail and little beyond that. The last part of the book gave advice for engineers, students, teachers and managers on how to interact with other people at school/work in order to convey information. I guess that has its place but I don't need it in a technical resource. On a brighter note, I thought the book did a good job covering resistors, capacitors and inductors. It not only discussed the function of each component, but described typical component behavior and how it is applied in various circuits which helped tie into the sections on filters, op-amps and power supplies. That being said, everything this book covers can be found on the internet and really isn't that useful as a quick reference manual.

I bought the first edition, and was impressed. As a US Marine Radar Technician and engineering student, I find that so many of us in the electronics fields either never built a solid foundation in the basics of electronics, or have forgotten a lot of the fundamentals. This is a great book for correcting either of those issues. The first edition did have some minor errors. The author, Darren Ashby, makes himself available both here and on his website, and replied to my comments and suggestions. When the second edition came out, I bought it, and gave my 1st edition to a coworker. Now that the third edition is out, I'm going to buy a couple copies and make it required reading for my young Marines. The book is full of good insights and reminders about the important fundamentals and practical aspects of working with electronics. I'm looking forward to seeing the latest updates in version 3, and I would highly recommend this book to anyone who works with electronics.

I got the book as a basic introduction to electrical engineering. I have messed around with some simple wiring in the past but never really had any idea what I was doing. This book was great, it had enough in depth explanation to cover my ignorance, and enough technical stuff that I had to scratch my head and re-read it a few times. I loved this book and would absolutely recommend it to anyone looking at entering the field of electrical engineering, or even if you are just interested in becoming a little more familiar with the technical world we live in.

I read it every year to review the basic knowledge ,which is very useful for design . I recommend every hardware engineer read it

Thank you.

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