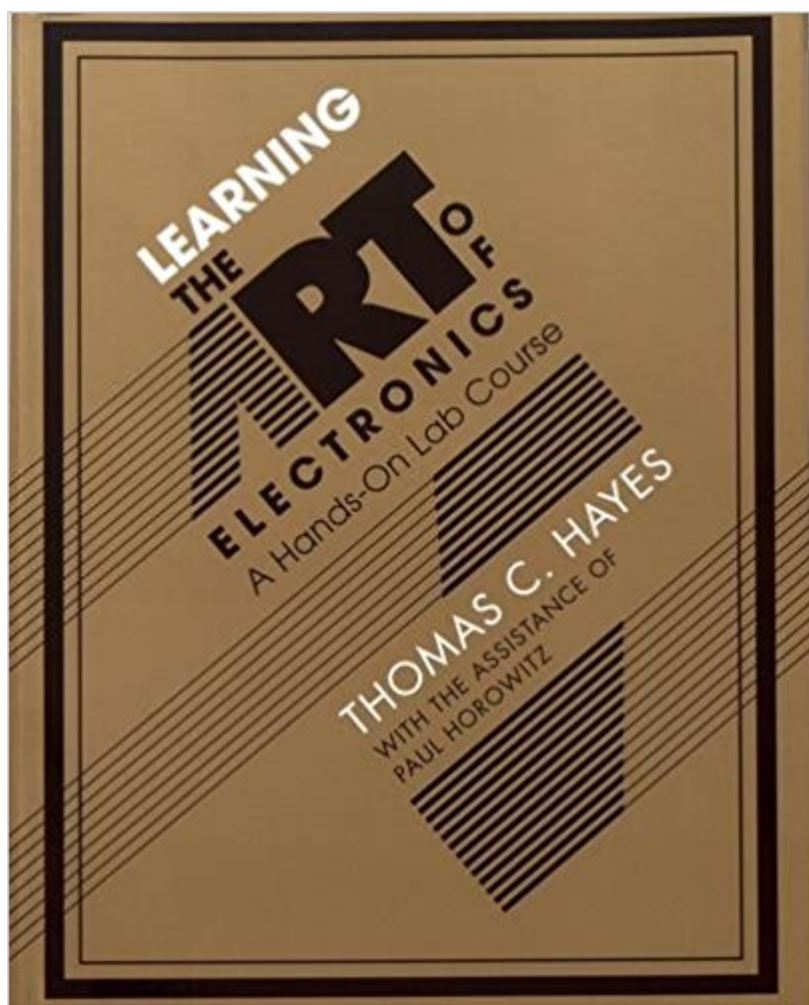


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# Learning The Art Of Electronics: A Hands-On Lab Course



## Synopsis

This introduction to circuit design is unusual in several respects. First, it offers not just explanations, but a full course. Each of the twenty-five sessions begins with a discussion of a particular sort of circuit followed by the chance to try it out and see how it actually behaves. Accordingly, students understand the circuit's operation in a way that is deeper and much more satisfying than the manipulation of formulas. Second, it describes circuits that more traditional engineering introductions would postpone: on the third day, we build a radio receiver; on the fifth day, we build an operational amplifier from an array of transistors. The digital half of the course centers on applying microcontrollers, but gives exposure to Verilog, a powerful Hardware Description Language. Third, it proceeds at a rapid pace but requires no prior knowledge of electronics. Students gain intuitive understanding through immersion in good circuit design.

## Book Information

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## Customer Reviews

'Author Thomas Hayes, ... designed the new volume for a full-semester laboratory course. [The book] is organised into 26 chapters, each offering rich context and clear explanations in labs, notes, supplementary material and worked problems ... labs are balanced between analog and digital electronics. Hayes begins with familiar analog circuitry and includes discussions of voltage dividers, Ohm's and Kirchoffs's laws, and Thevenin equivalents. The labs tackle RC filters in both time and frequency domains with a cheerful approach that is not overly mathematical ... retains many of the handsomely drawn circuits of the original Art of Electronics and is much more comprehensive ... Instructors will want to know if Learning the Art of Electronics can stand alone as an undergraduate lab text. The answer is yes. While the book does cross-reference The Art of Electronics, it 'means to

be self-sufficient', and it achieves that goal.' Paul J. H. Tjossem, Physics Today

Turn to this book if you want to learn about different types of circuits and their behavior. You will gain a deep and intuitive understanding of circuit operation, be exposed to advanced circuit designs, and learn to build analog and digital devices from first principles using basic components.

If you purchased the hands on lab course Learning The Art of Electronics (pub 2016) and want to do all the labs, you will find a very time consuming and tedious task of ordering the parts as there are over 135 distinct part numbers from 9 suppliers. Luckily, at the EEVblog forum, BobsURuncle posted Excel spreadsheets with all the parts organized in a format where they can be uploaded into the parts distributors shopping carts. This will save you hours of your time. Search for "Learning The Art Of Electronics - Parts BOM".

Helpful book for those that might be struggling with some of the content found inside AoE, e.g., beginners, hobbyists, new students, etc. Much improved and expanded since the earlier "student manual" format. Readers will have the opportunity to learn about and build many interesting circuits (assuming they purchase the necessary parts). Like AoE it quickly jumps into conceptualizing circuits from a Thevenin perspective and soon after hops to RC circuits i.e., frequency sensitive voltage dividers, filters, etc. Which is fine for some beginners. But, beginners, hobbyists, etc., that might need a little more mathematical/conceptual hand-holding before jumping headlong into Thevenin equivalence talk, etc., might consider checking out books by Paynter, e.g., Electronics Technology Fundamentals first, Practical Electronics for Inventors second, and then circling back around to this one and AoE. The one major fail would be the significant number of typos, reference errors, etc., liberally sprinkled throughout the book. Readers will need to check out the Errata list on the author's webpage. The book reads like one that was never read by a decent editor. It's quite challenging to see where any publisher editing was done. Readers and purchasers should be able to expect much more from academic book publishers...but alas...it looks like some of them are giving up when it comes to the MOST BASIC form of book publishing quality control i.e., actually reading the book and checking for obvious typos/errata before publishing and sending it out to the masses. Essentially, the book's content is great and will likely be helpful to many. Thumbs up and three stars to the author, he's done a great public and educational service. But, anyone purchasing it will need to carefully review the book's Errata page and make the numerous typo, etc., corrections. i.e., do the work the editors were paid for but clearly didn't do. Thumbs down and minus

two stars to the editors/publisher.

So much material ranging from analog circuits to microcontroller programming gives me the feeling that no stone is left unturned. I really like the fact there are lots of oscilloscope waveforms shown (instead of just sketches like in other college books) as well as many useful hints in their waveform/circuit diagrams.

Great electronic compendium! Good go to reference book.

This is a truly great reference book with lots of useful and usable real-world circuits.

This is a very useful companion of my favorite electronics textbook. Many of us need to actually perform the projects to make the theory useful.

It has completed my electronics library.

great addition to the text book

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