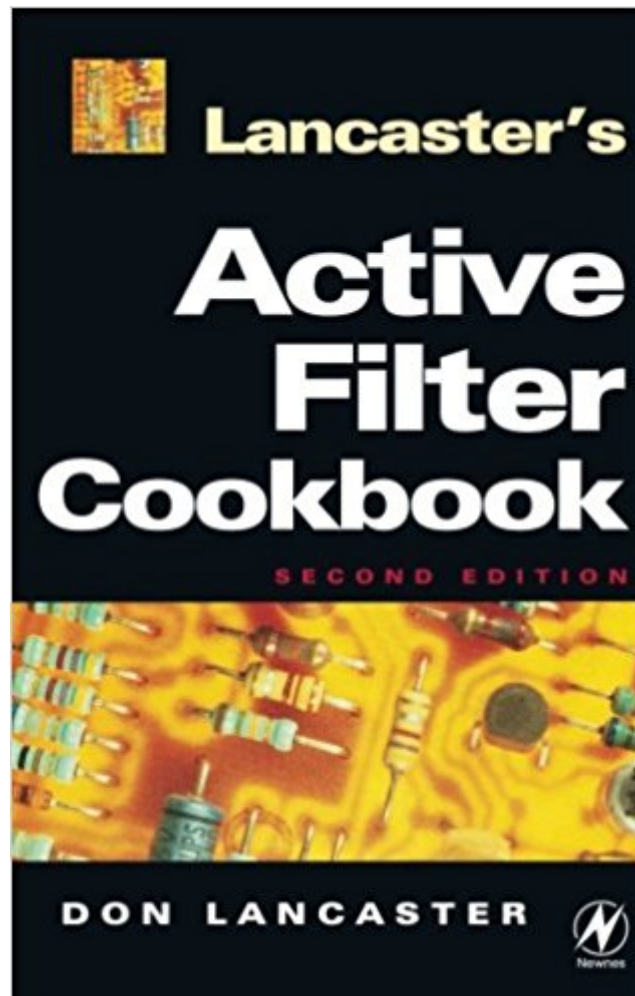




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# Active Filter Cookbook, Second Edition



## Synopsis

This Don Lancaster classic is by far the best-selling active filter book of all time. It gives you everything you need to know to build active lowpass, bandpass, and highpass filters. An active filter needs no inductors. Instead, op amps, resistors, and capacitors are used for better results. Advantages include lower cost, easy tuning, simple design, and modularity. Lancaster's Active Filter Cookbook includes practical elements such as working circuits, ready-to-use design tables, tuning, and real-world applications, making it easy to use and apply. You'll find both instant design and the mathematics behind coverage. Microcomputer pioneer Don Lancaster is the author of 34 books, 2 videos and countless articles and columns in technical magazines. He also heads Synergetics, an Arizona-based design and consulting firm.

## Book Information

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## Customer Reviews

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Don Lancaster heads Synergetics-Arizona, an electronics design and consulting firm. He is the

author of many best-selling books, including TTL Cookbook, Active-Filter Cookbook, and AppleWriter Cookbook.

Don Lancaster is a very good writer, and has focussed on what really matters for anyone designing analogue active filters. At 240 pages, this book has all the design guidelines, mathematics and practical tips for the popular single-amplifier biquad (SAB) circuits such as Sallen-Key and Multiple-FeedBack (MFB), and 3- or 4-opamp circuits such as State-Variable designs; it covers cascading multiple sections, with many practical examples up to 6th order filters; it covers bandpass, low-pass and high-pass active filters, plus "just enough" mention of notch and Cauer/elliptical filters, as well as filter applications and digital tuning, etc... but the edition I have - the 1995 - is a bit too old to cover some of the more recent developments. No mention of switched-capacitor filters (well, the MF10C has come and gone in popularity, so no problem there), but no mention of any digital filter techniques... even so, you probably want that in a separate book; this remains a good introduction, very useful as it is, providing an extremely good grounding in theory - such as damping (transitional Thompson-Butterworth and all that), normalization/scaling, "s-plane" equations, etc. The practical side is fully covered (e.g. "You can NOT build a stable, high-Q, easy-to-tune, single-[amplifier] bandpass filter"); sensitivity of component variation is covered well. The book is physically and conceptually the "right size" - with no "waffle"; many university textbooks may be larger, and cover a few obscure extra filter circuits, but 90% of designers will never need them in their work. It is much more useful than (although covers less filter types, and slightly less up-to-date than) Lenk's "Simplified Design of Filter Circuits", which is about the same size. It would be nice to see a new edition (although I am happy enough with what the 1995/6 edition has); it could be improved slightly by having some of the alternative/family names for filter circuits (such as KRC and VCVS) listed, and a few (very few) extra comments could be made as to why you would avoid certain circuits. It would also be nice if a bit of colour was used to clarify some diagrams, and perhaps have the chapter and subsection heading repeated at the top of each page. All that is relatively unimportant - basically: don't mess with perfection, this book would be worse if it tried to cover much more than it does (but it would be nice to see an end to the CD4016 being called a "new" development).

This book is by no means complete. In chapter 9 he apparently ran out of enthusiasm, no notch filters anywhere. Where are the Cauer filters? FDNR filters (frequency dependent negative resistance) are not mentioned with a single word. A lot of other filter circuits are plain missing. This book was

written probably over 30 years ago. Even the new editions contain references to the 741 This book is seriously old fashion. Virtually all the info you can get online for free. Worth about \$5, no more

This is one of the better books on filters, Lancaster actually knows what he is talking about with too much technical "junk" that make it look like it is a great book. Some authors use a lot of "junk" that really does not say much. It is well written compared to another author. This book is not confusing, or boring.

There's a lot to be said in favor of this book, I must acknowledge right up front. It does contain quite a few tabulated filter designs, and Mr Lancaster teaches a fairly straightforward approach to selecting from among them and scaling them to fit the user's needs. The print quality is good, too. On the other hand, it is a less complete book than I remembered it being from the days when I could still find my original copy. There are some gaps in treatment of notch filters, for instance, and less thorough coverage of some other types than I would have liked. I'm also not sure why he shunned everyday filter terminology like "Butterworth" and "ripple" in favor of dumbed-down alternatives like "flattest response" and "dips." And, being yet another reprint of the Second Edition, there has been no effort to update information on better op-amps that are available now, or to modernize the active filter applications that wrap up the book. Add to that the downright HEFTY price tag for this relatively slim reprint! Taking those reasons together, if I'd had the opportunity to glance through this volume in a store before buying, I probably wouldn't have done so. I ordered it more for sentimental reasons than anything else, but now that I can once again see its limitations for myself, I realize I would have been far better off putting that money toward a newer filter design book, such as the latest edition of Williams and Taylor. On the other hand, if you need the easy to use cookbook kind of information this book contains, and you do not foresee buying more than one book on the subject of active filters any time soon, then this book might very well be worth the price to you. What it DOES contain would be hard to find in any single other book. You'd probably have to search through two or three other works, and who knows how much you'd spend doing that. So, bottom line, I think it's fair to say that if you're looking for an all-in-one general resource on electronic filters, this is the one to have despite the price. But if you already have some other filter handbooks and a background in the subject, this one might not be a very good dollar value for you.

A great read full of masterful material on filters, somewhat general but unfortunately limited outside of audio frequencies. I didn't know enough to know what I was getting into, but I was hoping for

more applicability to radio frequency filters, but I am now learning that RF requires more sophisticated and sometimes expensive approaches. Oh well, still a great book for what it does contain.

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