Books we like here at Actinica

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ENGINEERING – BASICS and LORE:

The Art of Electronics by Paul Horowitz and Winfield Hill, pub. Cambridge University Press, ISBN 0-521-37095-7 c1989

Noise Reduction Techniques in Electronic Systems by Henry W. Ott, pub. John Wiley & Sons, ISBN 0-471-85068-3 (second edition is c1988; first published c1975). This is a very good book on why cables need to be shielded, how shields work (near field, far field is described clearly), how to avoid ground loops, the thermodynamics of noise, how to reduce digital circuit noise radiation (and why it's common-mode radiation you need to worry about), how to design to avoid ESD interference, how to design for EMI/EMC (it is not the source for the latest regulations – but in my opinion, it's excellent source to understand how to design to reduce emissions and susceptibility – which is the point as an engineer). It's worth the trouble to read it and understand it.

Building Electro-Optical Systems, Making It All Work, by Philip C. D. Hobbs, pub. John Wiley & Sons c2000 This book is well worth it. Think it as the "Art of Electronics" for the electro-optical world. He provides clear descriptions, guidelines to avoid subtle pitfalls. He clearly has a mastery of both optical and electronic systems.

High Speed Digital Design, A Handbook of Black Magic, by Howard W. Johnson and Martin Graham. C1993 by PTR Prentice-Hall
If all you do is look at his construction of the shop-built 21:1 passive probe, it will be worth it. Put down the 10X probe, and no square waves get hurt.

Troubleshooting Analog Circuits, by Robert A. Pease, c1991 by Butterworth-Heinemann
A classic.

Operational Amplifiers: Theory and Practice, by James K. Roberge, c1975 by Wiley and Sons
There's also a video course that goes with this book, sold by MIT. The video course is excellent; we used it at General Scanning to get a team up to speed on servo amplifiers, compensation, etc. Yes, it's older than you are, but so are your parents. Classical control engineering using op-amps as the focus of discussion.

AUDIO:

from Bob Pease, who seems to know good books,
is this recommendation (I have not yet seen the book)

Pro Audio Reference edited by Dennis Bohn
Avail at www.rane.com/ranestore.html or Barnes and Noble….
Pease says some of it's a plug for audio gear made by Rane..
but he also says it tells that 0dB for SPL is 20micropascals,
and that +/- 1 atmosphere would be 191dB, when the sound waves
are at double atmosphere at the peak, and zero pressure at the trough,
"which is hard to generate, or imagine"

INDUSTRIAL DESIGN:

The Design of Everyday Things, by Donald Norman, c
Norman sees good design (as in say, a VCR that can be programmed without taking the 2 credit course with the manufacturer) as the way future products will succeed in a busy marketplace.
He describes a device, which has now become the Palm Pilot and its cousins (the book was written about 1990).
Also, his comment "it must have won an award" is a humorous condemnation of pointlessly cute, inscrutable design.

PATENTS, INTELLECTUAL PROPERTY:

Patent It Yourself, 7th Edition, by David Pressman, c2000 by David Pressman, avail at www.nolo.com
This gets updated every year as the patent laws change slightly.
I used an earlier version of this book when I studied for the exam with the PTO. I passed.
Pressman is an excellent author, and he goes into how to market an invention, whether a patent is worth it or not, the value of trade secrets and trademarks. Answers many questions about what a patent is, and what it is not. I highly recommend this to anyone who considers patents.

Landis on Mechanics of Patent Claim Drafting, Third Edition, by Robert C. Faber, c1990 Practicing Law Institute (John L. Landis wrote the first two editions).
Everything you need to know about drafting patent claims, but were too modest to ask.

SPECIALTY ELECTRONICS BOOKS:

Photodiode Amplifiers Op Amp Solutions, by Jerald G. Graeme, c1996 McGraw-Hill
Many configurations of the transimpedence front end used for photo diode amplifiers.
He clearly shows how to reduce the noise and yet make a fast amplifier.
Many bode plots, many options for design modifications.
He also talks about amplifiers for position sensitive (duo-lateral) photo diodes.

Understanding Digital TV; the route to HDTV, by Brian Evans, c 1995 IEEE Press, IEEE Order Number PP04366; ISBN 0-7803-1082-9 Excellent writing and clear explanations.