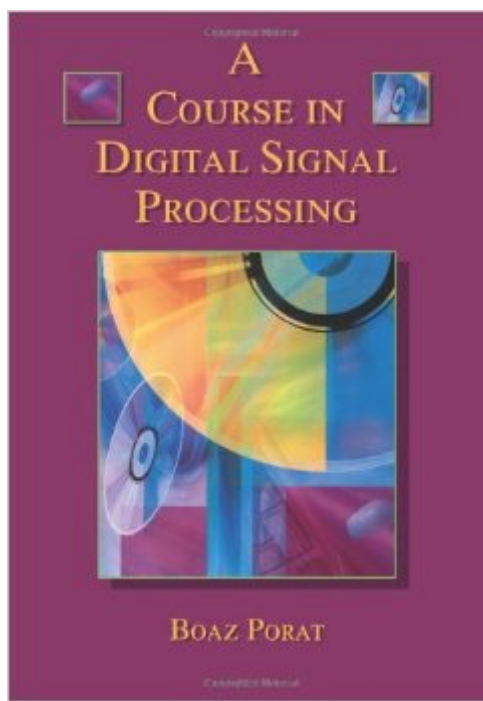# A Course In Digital Signal Processing

Synopsis

A comprehensive, practical and up-to-date exposition on digital signal processing. Both mathematical and useful, this book uses a rigorous approach to help readers learn the theory and practice of DSP. It discusses practical spectral analysis, including the use of windows for spectral analysis, sinusoidal signal analysis, and the effect of noise. It also covers FIR and IIR filters, including detailed design procedures and MATLAB tools.

Book Information

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Customer Reviews

I am using the text in a DSP course as an undergrad in Electrical Engineering. It is a very clearly written, precise text that I feel is written for the undergraduate/first-year graduate who is taking a first course in DSP. Because of this, the author tends to omit some important details that other books include, particularly Oppenheim and Schafer (the intro DSP bible, as it were). This can be a great help to busy students who want a basic understanding of the theory behind DSP without caring too much about its nuances.The disadvantage of the author's conciseness is a general lack of thorough descriptions of complicated ideas. Many ideas are paraphrased rather than explained in full, which I suppose is natural at this level. For example, when discussing the concept of sampling random signals, Porat notes that "White noise cannot be sampled" because it "does not exist as a physical entity." This statement, while true, is incomplete, as any knowledgable DSP expert can attest.That MATLAB code, while present, is sparse and incomplete. I suppose this is better than nothing, but don't expect a computer-based approach to problems!Otherwise, this book has proven a solid,

easily understandable (with the proper math background) textbook for a first-level course in DSP after a standard Signal Processing course. If you're looking for more detail, go with Oppenheim and Schafer.

Several things I liked about this book:a. Concise.b. The order of the book (better than oppenheim's book). CTFT, DTFT, Sampling Theorem, DTF, FFT, Spetral Analysis are all related to Fourier analysis. Oppenheim's book has filter desgin in between, I don't know why he did that.c. I like the examples and questions provided in this book. For example, the example about the Nyquist-T spectrum, the example about the passband signal direct sampling...very thoughtful, useful examples for engineers.Things I don't like:a. The book is kind of weak on Sampling theorem and DFT. I don't know why the author wants to cut DFS, i think it's quiet useful to understand DFT.I don't recommend this book for self-study (oppenheim's book is better with more details). However, it's a good concise textbook given the condition that there is an experienced intructor guiding the students. I'd like to use this book as textbook if I become a professor in the future.

While the discussion in this book is probably all accurate, the book has two problems that make it better suited as a supplemental reference than a course text. First, the author uses a very strange notation for transforms that seems to be of his own devising. Second, a number of the problems are poorly written making it very hard to see what he is even asking. A third problem worth noting is that there doesn't seem to be a Fourier transform table anywhere in the book. If you are coming to this book from other DSP texts or Signals and Systems books get ready to work just to figure out what he's talking about.

I liked this book. The author starts with a review of frequency domain analysis (good in case it has been some time you dealt with that, like me) then moves on in consecutive chapters with a reasonable amount of examples for every topic. I liked the clear presentation of the Z-transform. I also use the book now as a reference book although it's not optimal for that purpose. The author supplies many exercise problems at the end of each chapter, but most of them are quite hard to solve, especially if you have no other background than the book itself.

The book has a lot of great information, and I highly recommended it for its contents. Please be aware that the binding on the book isn't all that good. I have a copy of this book from my university library, and the binding is coming apart. The copy I just bought has a similar defect in the binding.

Seems like the printer didn't do the best job when they bound the books. Oh well, it's worth overlooking for the contents of the book.

I LOVE this book for its exemplary clarity, conciseness and rigor. I liked having both the informal proofs which involve distributions given in parallel with the elementary proofs, thus presenting discrete signals both as sequences and as distributions. The book is written without any annoying mathematical sloppiness, quite common in DSP literature; yet, it is entirely accessible for everyone who is willing to invest an appropriate effort. Also, this is a real TEXTBOOK rather than a reference book, which keeps its size manageable and non-intimidating. In short, in my opinion, this is a must-have book for any student wishing to learn DSP with genuine understanding.

This is a good overall book although the notations while consistent were different from most other books. The key part of this book are its problems. The explanations of concepts are sometimes only fully understood after reading through the problems, understanding them and solving them. The difficulty level of the problems varies but for the most part reflect the text in the chapters. The asterisk annotated problems are harder but have a lot of practical significance. The organization and sequence is definitely better than Oppenheim Schafer. Covering Sampling Theorem, DFT,FFT first is definitely easier and provides a solid base to start understanding Z transforms and filter design. So if you are a immune to the notational differences or are ready to take on different notations (some people are not), this is a good book for you.

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