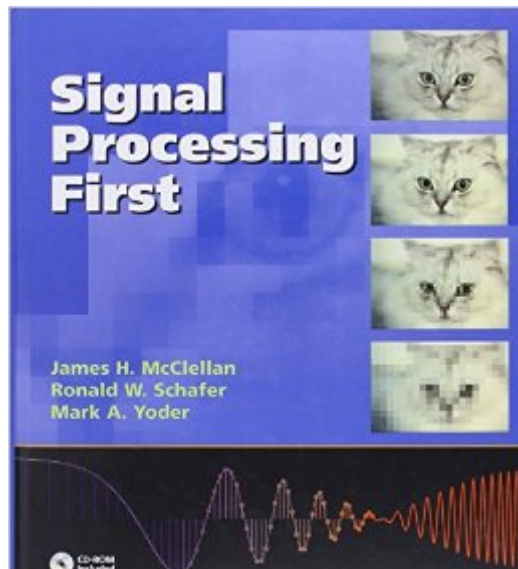# Signal Processing First

Synopsis

Designed and written by experienced and well-respected authors, this hands on, multi-media package provides a motivating introduction to fundamental concepts, specifically discrete-time systems. Unique features such as visual learning demonstrations, MATLAB laboratories and a bank of solved problems are just a few things that make this an essential learning tool for mastering fundamental concepts in today's electrical and computer engineering forum.   Covers basic DSP concepts, integrated laboratory projectsâ "related to music, sound and image processing. Other topics include new MATLAB functions for basic DSP operations, Sinusoids, Spectrum Representation, Sampling and Aliasing, FIR Filters, Frequency Response of FIR Filters, z-Transforms, IIR Filters, and Spectrum Analysis.   Useful as a self-teaching tool for anyone eager to discover more about DSP applications, multi-media signals, and MATLAB.

Book Information

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Customer Reviews

This book is a must-read for EE or SW Engr students as a concept builder on learning the DSP as the first class. The homework assignments build the path for learning the DSP step-by-step. In chapter 4, Sampling and Aliasing, paves the way to understand the FIR and IIR using the z-Transform--especially some homework problems in chapter 6, 7 and 8, are brain-storm types, which depict a cascade connection of two or three LTI systems, with the inputs in time-domain, the students need to solve them in frequency-domain by applying the sampling techniques learned in chapter 4, from C-to-D using the Laplace Transform, then finding the frequency response in H(z)

and convert them to D-to-C forms, in which the FIR circuits have one pole while the IIR have multiple poles. That's all I learned from this great textbook. I think that the update version (release in 2014?) would be my favorite one too.

We use this book for our sophomore-level course in signal processing for biomedical engineering students. For our needs, this is the right book, for several reasons:* First and foremost, the book covers signals only, not systems. This means that the course can be taken without prior knowledge of differential equations.* The writing is quite clear. Even my sophomores agree that the book is readily readable for the most part.* The authors' method, described as "jumping around" by several other reviewers, works quite well. Topics like aliasing and undersampling are introduced first for simple cases like single sinusoids, then come up more generally later. My students respond well to this approach.* It is fairly complete, covering both continuous- and discrete-time methods.There are some downsides:* The book is dated. I look forward to the new edition that is slated to come out in 2013.* I find the MATLAB examples and demos unimpressive and not very useful, even though I use MATLAB fairly extensively in my class.* More modern examples, e.g. from image processing, would be helpful. Fortunately, it is not that difficult for the instructor to provide these himself / herself.In summary, our students make immense progress using this book. It prepares them well for follow-up courses in linear systems or digital signal processing.

I'm not sure who wrote the positive reviews here, but I can tell you as a student using this book that it is among the worst I've ever been stuck with and most of my classmates seem to agree.The concepts are made much more difficult than they should be by poor writing. The authors jump around constantly, use new terminology at times before introducing it, and provide examples that are inadequate in helping to solve the problems at the end of the chapter. Stylistically, the writing is very bland and sure to put you to sleep. The first sentence of the book is "This is a book about signals and systems."Sure, this book may cover all of the core concepts involved in signal processing, but trying to make sense of it when you don't already have a background in the subject is quite a challenge. After reading the chapters, we were unable to solve most of the problems in the book until the answers were given to us. I've dealt with bad textbooks before, but this one tops them all. Needless to say, it was a very frustrating experience and I can't say I recommend this book.

I have been using this book for my master's course and this is the first time I have understood DSP. And it feels great to finally have grasped the fundamentals of the subject that has long evaded me.

The treatment in this book is very unique and novel. And the mathematics is used as a tool to help understanding the concepts and not given in the form of pages of proofs in which the reader can get lost. I salute authors for coming out with such an original and easy-to-understand approach to the subject.Highly recommended!

This concept behind this book is to introduce students to one of the more difficult aspects of ECE before they have even started the curriculum. I'm not sure how it is implemented at other colleges but at my college it is very much like a line from the original Willy Wonka movie:"I've just decided to switch our Friday schedule to Monday, which means that the test we take each Friday on what we learned during the week will now take place on Monday before we've learned it. But since today is Tuesday, it doesn't matter in the slightest. Pencils ready!"In short, this book CANNOT, by itself, teach you what you need to know. It is far too truncated and assumes you already know things you might well not. Furthermore, if the book is implemented as it is intended, the student isn't ready for the material contained in the book. On top of that, a critical component of the book is the Matlab portion. Which presumably some college integrate into an actual lab portion of the class. My college does not, and if you were trying to learn it by yourself..well obviously you wouldn't have a TA helping you. So, without a lab, you are at a complete loss for doing a critical part of the book...unless of course you already know Matlab.This book is terrible, its implementation (at least at my college) is beyond terrible, and I can't imagine anyone using it to self teach without SEVERAL other textbooks to assist.B.T.W. I'm sure professors, grad students, and people who already have a firm grasp of the all the unstated prerequisites for this book absolutely love the book. It seems like an advanced Schaum's outline pretending to be an introductory text...absolutely amazingly horrid, I hate it! and you should too!OH and, as another reviewer pointed out. This book is NOT the same as DSP First: A Multimedia Approach, which I have not used and can't say anything about.

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