ROBERT M. GRAY AND JOSEPH W. GOODMAN *Fourier transforms: an introduction for engineers*,
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Fourier analysis is an indispensable tool for every engineer, in particular for every electrical engineer. Fourier analysis is also a beautiful piece of mathematics which involves nontrivial notions like Lebesgue integration, L^p spaces, generalized functions etc. It is therefore not an easy task to give a careful treatment of this subject for engineering students without frightening them by getting too much involved in abstract mathematics. However, this is precisely what this textbook is aiming at and in my opinion with a great deal of success. The only prerequisites are basic calculus, some notions about complex variables and a tiny bit of linear algebra. Of course this implies that only the most simple (yet often most practical) cases are discussed and even then, only the most elementary proofs are included, while more complicated cases are approached with a lot of typical engineering heuristics. Continuous and discrete, finite and infinite signals are treated in parallel. Also two-dimensional transforms are included. Always the practical aspects are emphasized thus sampling, the DFT and FFT, quantization, but also some notions from linear system theory get a fair amount of attention. Relations with the Laplace transform and other transforms like wavelets are only touched upon. The book is mainly intended as a textbook and as such it contains many exercises after each chapter. The contents is most accurately described by the title: An introduction to Fourier transforms for engineering (students).

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