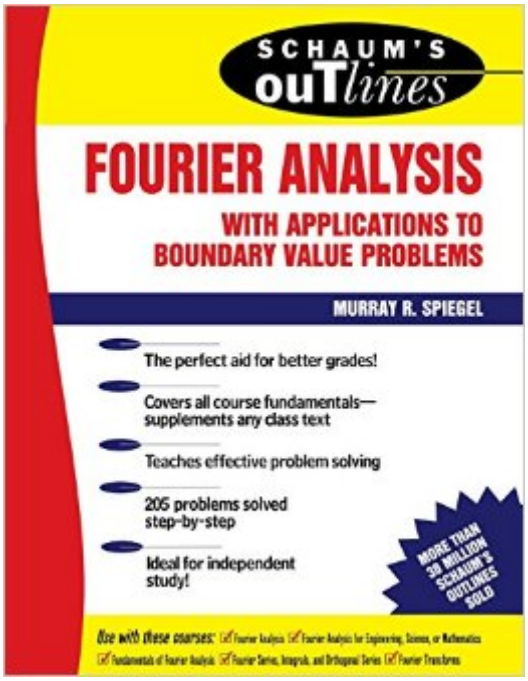
Schaum's Outline Of Fourier Analysis With Applications To Boundary Value Problems



Synopsis

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Customer Reviews

This Schaum's outline is unique in that you not only get a thorough coverage of Fourier analysis, but of other orthogonal functions such as Bessel, Legendre, Hermite, and Laguerre. The first chapter would be interesting to students of partial differential equations because of its excellent treatment of boundary value problems and of the different types of partial differential equations. It makes an interesting first taste of PDE solution methods. Chapter two is a traditional treatment of Fourier series and its applications. As in the first chapter, it is the applications that make the chapter unique as the Fourier series is used to solve problems in heat flow, Laplace's equations, and vibrating

systems. Chapter three has a good discussion of why you would actually care if a function is orthogonal. Chapter four discusses special functions and how they are evaluated. Chapters five and six are all about applications of the Fourier integral and of the Bessel function respectively. Chapter seven uses the Legendre functions to solve problems such as finding the potential interior and exterior to a sphere given a specific charge distribution. Chapter eight finishes the guide with a discussion of Hermite and Laguerre polynomials, more from a properties standpoint than from an applications standpoint. The reader of this guide should already be knowledgeable of Calculus and differential equations, and should probably have some kind of background in physics or engineering to get the most from the book. It would be a good supplement for the student of partial differential equations or signal processing as well as the student of Fourier analysis.