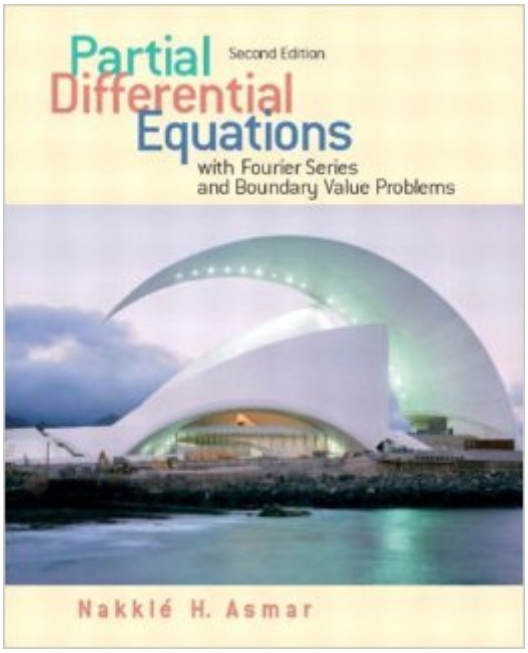
Partial Differential Equations With Fourier Series And Boundary Value Problems (2nd Edition)



Synopsis

This example-rich reference fosters a smooth transition from elementary ordinary differential equations to more advanced concepts. Asmar’s relaxed style and emphasis on applications make the material accessible even to readers with limited exposure to topics beyond calculus. Encourages computer for illustrating results and applications, but is also suitable for use without computer access. Contains more engineering and physics applications, and more mathematical proofs and theory of partial differential equations, than the first edition. Offers a large number of exercises per section. Provides marginal comments and remarks throughout with insightful remarks, keys to following the material, and formulas recalled for the reader’s convenience. Offers Mathematica files available for download from the author’s website. A useful reference for engineers or anyone who needs to brush up on partial differential equations.

Book Information

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Customer Reviews

I can not say enough good things about this book. I absolutely love it. It is like the rosetta stone of applied mathematics; it offers tremendous insights and intuitions on difficult subjects. I have studied math and physics for many years, but, for example, I’ve never fully understood Bessel functions ... until now. Most texts treat Bessel functions by starting with Bessel’s equation, and then listing and proving the numerous identities that involve Bessel functions. It’s a lot of tedious math (e.g., writing out long series expansions) to do if you aren’t clear on the "why". What I love about this book is that he starts with the applications - you learn how to use Bessel functions to expand solutions to

differential equations, without bothering about all of the Bessel function details ... until the final sections of the chapter, when the details are filled in. It’s a risky approach - will the reader simply accept steps that aren’t proven until later - but it totally works. The author does a terrific job of including just enough at each step to make the proofs totally self-contained (with reference to proofs made in other sections and/or in the exercises). The same approach of teaching the subject through increasingly complex examples is followed consistently through all of the chapters.To the reviewer who complained of this being a "smoke and mirrors" approach to technical education, I couldn’t disagree more. As a lifelong student and educator myself, there simply is no other way to fully learn a subject, than to struggle (within reason) through the exercises yourself; having every step laid out for your perusal does not achieve the same effect.

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