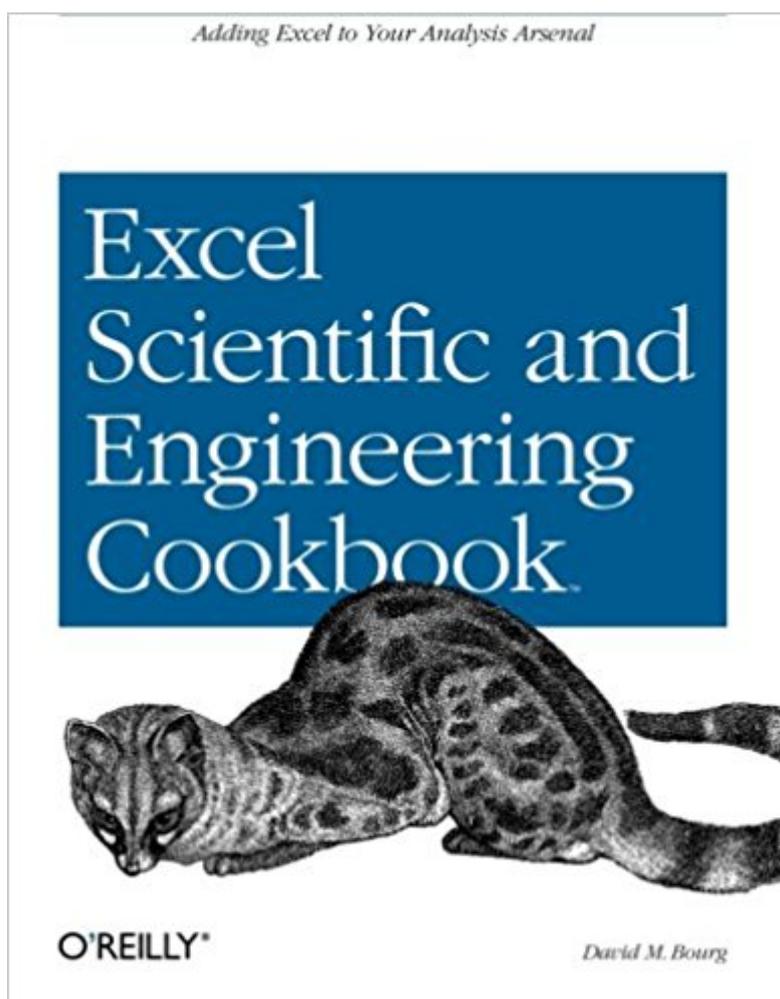The book was found

# Excel Scientific And Engineering Cookbook (Cookbooks (O'Reilly))

# Synopsis

Given the improved analytical capabilities of Excel, scientists and engineers everywhere are using it--instead of FORTRAN--to solve problems. And why not? Excel is installed on millions of computers, features a rich set of built-in analyses tools, and includes an integrated Visual Basic for Applications (VBA) programming language. No wonder it's today's computing tool of choice. Chances are you already use Excel to perform some fairly routine calculations. Now the Excel Scientific and Engineering Cookbook shows you how to leverage Excel to perform more complex calculations, too, calculations that once fell in the domain of specialized tools. It does so by putting a smorgasbord of data analysis techniques right at your fingertips. The book shows how to perform these useful tasks and others:Use Excel and VBA in generalImport data from a variety of sourcesAnalyze dataPerform calculationsVisualize the results for interpretation and presentationUse Excel to solve specific science and engineering problemsWherever possible, the Excel Scientific and Engineering Cookbook draws on real-world examples from a range of scientific disciplines such as biology, chemistry, and physics. This way, you'll be better prepared to solve the problems you face in your everyday scientific or engineering tasks.High on practicality and low on theory, this quick, look-up reference provides instant solutions, or "recipes," to problems both basic and advanced. And like other books in O'Reilly's popular Cookbook format, each recipe also includes a discussion on how and why it works. As a result, you can take comfort in knowing that complete, practical answers are a mere page-flip away.

# Book Information

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# Customer Reviews

It is often either inconvenient or financially unfeasible to solve every mathematical problem with a standalone procedural language or an expensive application such as Matlab or Mathematica. Since Excel has such advanced computational capabilities built into it and is ubiquitous in offices and homes, it would make sense to mine this application for numerical problem solving techniques. Bourg does a masterful job of presenting the tools available in Excel and showing the reader how to put them to work to solve real world engineering and mathematical problems. First, he spends a couple of chapters briefly going over Excel and its language VBA (Visual Basic for Applications). Next he goes over some intermediate level tasks such as collecting and cleaning up data, charting including 3D charts, and statistical analysis tasks such as correlating data and generating random numbers. Next Bourg moves into purely mathematical tasks such as working with discrete Fourier transforms, manipulating matrices and vectors, as well as working with basic mathematical functions. Once you have learned to use these mathematical tools in Excel, Bourg uses them to show you how to perform curve fitting and regression, solve equations, perform integration and differentiation, and solve both ordinary and partial differential equations. He even spends time on performing multivariable calculus and the finite element method in Excel. Chapter 13, on optimization, was my favorite chapter. Here, Bourg is actually getting into a little algorithm analysis and design via linear programming and genetic algorithms. This chapter showed me some truly innovative uses of Excel. The final chapter deviates from the scientific flavor of the book and concentrates on more traditional financial applications.

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