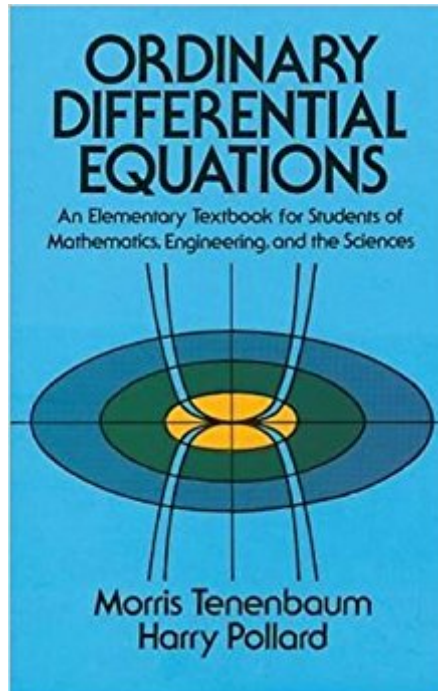




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Ordinary Differential Equations (Dover Books On Mathematics)



Synopsis

This unusually well-written, skillfully organized introductory text provides an exhaustive survey of ordinary differential equations — equations which express the relationship between variables and their derivatives. In a disarmingly simple, step-by-step style that never sacrifices mathematical rigor, the authors — Morris Tenenbaum of Cornell University, and Harry Pollard of Purdue University — introduce and explain complex, critically-important concepts to undergraduate students of mathematics, engineering and the sciences. The book begins with a section that examines the origin of differential equations, defines basic terms and outlines the general solution of a differential equation—the solution that actually contains every solution of such an equation. Subsequent sections deal with such subjects as: integrating factors; dilution and accretion problems; the algebra of complex numbers; the linearization of first order systems; Laplace Transforms; Newton's Interpolation Formulas; and Picard's Method of Successive Approximations. The book contains two exceptional chapters: one on series methods of solving differential equations, the second on numerical methods of solving differential equations. The first includes a discussion of the Legendre Differential Equation, Legendre Functions, Legendre Polynomials, the Bessel Differential Equation, and the Laguerre Differential Equation. Throughout the book, every term is clearly defined and every theorem lucidly and thoroughly analyzed, and there is an admirable balance between the theory of differential equations and their application. An abundance of solved problems and practice exercises enhances the value of Ordinary Differential Equations as a classroom text for undergraduate students and teaching professionals. The book concludes with an in-depth examination of existence and uniqueness theorems about a variety of differential equations, as well as an introduction to the theory of determinants and theorems about Wronskians.

Book Information

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Customer Reviews

This book is my (Ordinary) Diff Eqs Bible. There's a good reason that this book, which was first published in 1963(!), is still in print--because it's the best!! I'll admit that I'm obsessed with math as it is, but I'm absolutely crazy about this book!! I LOVE IT!! I seriously carry this thing around with me everywhere (

Love the book overall, I found it easy to read and follow along with. The author keeps it simple and doesn't say more than is needed but still provides all the information you need to understand the topic. I used it in place of my course's recommended textbook and did just fine in the course. The only problem I have with it, which is why I gave it four out of five stars, is it doesn't talk about Convolutions and only briefly touches on Laplace Transforms. Other than that though, I would recommend this book for anyone in the undergraduate level learning about differential equations.

This is an amazingly complete reference on differential equations. The authors offer techniques with lucid explanations and shortcuts. There are ample problems (together with answers) to cut your teeth on. The categorizations are brilliant and the techniques really get under your skin. There are also whole sections devoted to real life problems that lead to all categories of differential equations, again replete with examples and solutions. The miraculous part of this book is just the number of problems provided. Basic calculus, with knowledge of differentiation and integration techniques are the only prerequisites. Highly recommended.

For math background, all that is needed for this book is a first semester in calculus. If you are looking for a book to learn ordinary differential equations (ODEs) from or for a second book for a class, buy this one. The book (which covers methods of solving/applying ordinary differential equations) are explained in just the right amount of detail--it isn't a novel, but it isn't something you should get too bogged down in. Also, there are LOTS of examples, which are all very helpful! The problem sets were put together very well--there are lots of problems and they start out easy and get harder. Also, one of the best things about this book is that it has most of the answers to problems!

This makes this book more than sufficient for self-study. This is my favorite Dover Publications book!

This book has got to be one of the better companion math books on Differential Equations out there. This is my first dover book but after my experience with this one I may go ahead and purchase those for thermodynamics and fluid mechanics for college. My college textbook for my Diff EQ course is good but it can be rather dull in the sense it doesn't expound in certain areas and doesn't give you enough problems/examples to work through and not a whole lot show the step by step process. The dover book on the other hand succeeds in every aspect I just mentioned. Not to mention this book was around a twelfth the cost of the one "needed" for class. So for any of you out there that enjoy math like I do or need a companion book or would just prefer a cheaper alternative to textbooks, if you don't have to turn in hw problems or something along those lines, this is the perfect book for you!

i found this book to be a little bit confusing in my introductory DE class found it to take to many steps to arrive to a simple conclusion guess it is more focused towards mathematics students besides that it is a great book has lots of problems and is well written out wished it had a solutions manual though

I am taking differential equations over the summer and struggling a little with keeping up. The assigned text is very expensive, over \$150 and difficult to follow. I opted to purchase a cheaper electronic version of the text and purchased this book to help me with the class. This book is better written and much easier to follow. I am sure it will help me with the class. There is no easy way to learn differential equations, but this book approaches the task in a more student aimed presentation method instead of making assumptions. The quality of the book was as described and the shipping was very fast. I was glad to get it earlier than the planned shipping date because I needed it ASAP.

There are many textbooks on ODE out there. Most of them cost something like 50-100 bucks. This one is about 20. HOWEVER this book is simply THE BEST mathematics textbook I have ever come across. And although there are some other books of more or less decent quality, why the heck should you pay more? And, btw, don't be afraid of its size. It's only because of a huge amount of examples. After all, if you're just reviewing the subject (as I did), you can simply skip them (albeit I wouldn't recommend doing this).

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