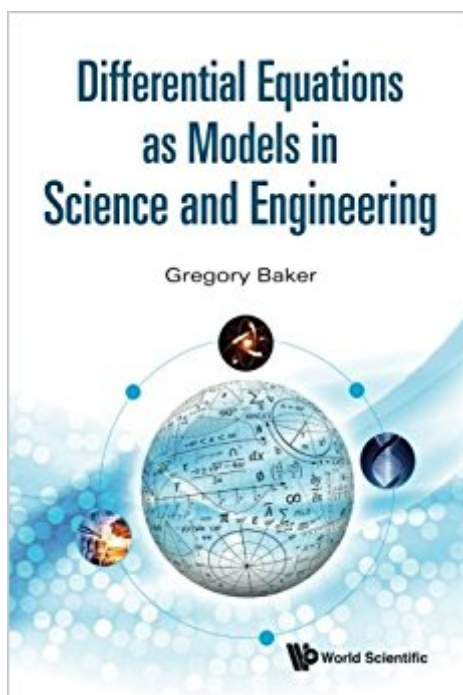The book was found

Differential Equations As Models In Science And Engineering

Synopsis

This textbook develops a coherent view of differential equations by progressing through a series of typical examples in science and engineering that arise as mathematical models. All steps of the modeling process are covered: formulation of a mathematical model; the development and use of mathematical concepts that lead to constructive solutions; validation of the solutions; and consideration of the consequences. The volume engages students in thinking mathematically, while emphasizing the power and relevance of mathematics in science and engineering. There are just a few guidelines that bring coherence to the construction of solutions as the book progresses through ordinary to partial differential equations using examples from mixing, electric circuits, chemical reactions and transport processes, among others. The development of differential equations as mathematical models and the construction of their solution is placed center stage in this volume.

Book Information

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This textbook develops a coherent view of differential equations by progressing through a series of typical examples in science and engineering that can be modeled by differential equations. All steps of the modeling process are covered: formulation of a mathematical model; mathematical concepts that lead to constructive solutions; validation of the solutions; and consideration of the consequences. The volume engages students in thinking mathematically and appreciating its relevance in science and engineering. It shows students how to solve the typical differential equations that arise in science and engineering based on just a few guiding principles. The development of mathematical models is placed center-stage in this volume.

This is the worst textbook I have used in my two years at university and by far the worst math book I've ever used. The problems are needlessly hard and expect you to do about an hour of algebra for each one. Instead of teaching you how to do the math and then considering the applications, it does the opposite and makes everything harder to understand in the process.

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