

Applied Partial Differential Equations Haberman 5th

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Applied Partial Differential Equations - J. R. Ockendon 2003

Partial differential equations are a central concept in mathematics. They are used in mathematical models of a huge range of real-world phenomena, from electromagnetism to financial markets. This new edition of the well-known text by Ockendon et al., providing an enthusiastic and clear guide to the theory and applications of PDEs, provides timely updates on: transform methods (especially multidimensional Fourier transforms and the Radon transform); explicit representations of general solutions of the wave equation; bifurcations; the Wiener-Hopf method; free surface flows; American options; the Monge-Ampere equation; linear elasticity and complex characteristics; as well as numerous topical exercises. This book is ideal for students of mathematics, engineering and physics seeking a comprehensive text in the modern applications of PDEs

Partial Differential Equations - T. Hillen 2019-05-15

Provides more than 150 fully solved problems for linear partial differential equations and boundary value problems. *Partial Differential Equations: Theory and Completely Solved Problems* offers a modern introduction into the theory and applications of linear partial differential equations (PDEs). It is the material for a typical third year university course in PDEs. The material of this textbook has been extensively class

tested over a period of 20 years in about 60 separate classes. The book is divided into two parts. Part I contains the Theory part and covers topics such as a classification of second order PDEs, physical and biological derivations of the heat, wave and Laplace equations, separation of variables, Fourier series, D'Alembert's principle, Sturm-Liouville theory, special functions, Fourier transforms and the method of characteristics. Part II contains more than 150 fully solved problems, which are ranked according to their difficulty. The last two chapters include sample Midterm and Final exams for this course with full solutions.

Ordinary Differential Equations - Morris Tenenbaum 1985-10-01

Skillfully organized introductory text examines origin of differential equations, then defines basic terms and outlines the general solution of a differential equation. Subsequent sections deal with integrating factors; dilution and accretion problems; linearization of first order systems; Laplace Transforms; Newton's Interpolation Formulas, more.

Partial Differential Equations - Walter A. Strauss 2007-12-21

Partial Differential Equations presents a balanced and comprehensive introduction to the concepts and techniques required to solve problems containing unknown functions of multiple variables. While focusing on the three most classical partial differential equations (PDEs)—the wave, heat, and Laplace equations—this detailed text also presents a broad

practical perspective that merges mathematical concepts with real-world application in diverse areas including molecular structure, photon and electron interactions, radiation of electromagnetic waves, vibrations of a solid, and many more. Rigorous pedagogical tools aid in student comprehension; advanced topics are introduced frequently, with minimal technical jargon, and a wealth of exercises reinforce vital skills and invite additional self-study. Topics are presented in a logical progression, with major concepts such as wave propagation, heat and diffusion, electrostatics, and quantum mechanics placed in contexts familiar to students of various fields in science and engineering. By understanding the properties and applications of PDEs, students will be equipped to better analyze and interpret central processes of the natural world.

Applied Complex Analysis with Partial Differential Equations -

Nakhlé H. Asmar 2002

This reader-friendly book presents traditional material using a modern approach that invites the use of technology. Abundant exercises, examples, and graphics make it a comprehensive and visually appealing resource. Chapter topics include complex numbers and functions, analytic functions, complex integration, complex series, residues: applications and theory, conformal mapping, partial differential equations: methods and applications, transform methods, and partial differential equations in polar and spherical coordinates. For engineers and physicists in need of a quick reference tool.

Partial Differential Equations for Scientists and Engineers - Tyn Myint U. 1987

Applied Partial Differential Equations - Richard Haberman 2013

Normal 0 false false false This book emphasizes the physical interpretation of mathematical solutions and introduces applied mathematics while presenting differential equations. Coverage includes Fourier series, orthogonal functions, boundary value problems, Green's functions, and transform methods. This text is ideal for readers interested in science, engineering, and applied mathematics.

Partial Differential Equations and Boundary-Value Problems with

Applications - Mark A. Pinsky 2011

Building on the basic techniques of separation of variables and Fourier series, the book presents the solution of boundary-value problems for basic partial differential equations: the heat equation, wave equation, and Laplace equation, considered in various standard coordinate systems--rectangular, cylindrical, and spherical. Each of the equations is derived in the three-dimensional context; the solutions are organized according to the geometry of the coordinate system, which makes the mathematics especially transparent. Bessel and Legendre functions are studied and used whenever appropriate throughout the text. The notions of steady-state solution of closely related stationary solutions are developed for the heat equation; applications to the study of heat flow in the earth are presented. The problem of the vibrating string is studied in detail both in the Fourier transform setting and from the viewpoint of the explicit representation (d'Alembert formula). Additional chapters include the numerical analysis of solutions and the method of Green's functions for solutions of partial differential equations. The exposition also includes asymptotic methods (Laplace transform and stationary phase). With more than 200 working examples and 700 exercises (more than 450 with answers), the book is suitable for an undergraduate course in partial differential equations.

Introduction to Partial Differential Equations - K. Sankara Rao 2010

Partial Differential Equations: Graduate Level Problems and Solutions -

Igor Yanovsky 2014-10-21

Partial Differential Equations: Graduate Level Problems and Solutions By Igor Yanovsky

Elementary Applied Partial Differential Equations - Richard Haberman 1998

KEY BENEFIT Emphasizing physical interpretations of mathematical solutions, this book introduces applied mathematics and presents partial differential equations. KEY TOPICS Leading readers from simple exercises through increasingly powerful mathematical techniques, this book discusses heat flow and vibrating strings and membranes, for a

better understand of the relationship between mathematics and physical problems. It also emphasizes problem solving and provides a thorough approach to solutions. The third edition of , *Elementary Applied Partial Differential Equations; With Fourier Series and Boundary Value Problems* has been revised to include a new chapter covering dispersive waves. It also includes new sections covering fluid flow past a circular cylinder; reflection and refraction of light and sound waves; the finite element method; partial differential equations with spherical geometry; eigenvalue problems with a continuous and discrete spectrum; and first-order nonlinear partial differential equations. An essential reference for any technical or mathematics professional.

Elements of Partial Differential Equations - Ian N. Sneddon
2013-01-23

This text features numerous worked examples in its presentation of elements from the theory of partial differential equations, emphasizing forms suitable for solving equations. Solutions to odd-numbered problems appear at the end. 1957 edition.

Elementary Applied Partial Differential Equations - Richard Haberman
1987

This text is designed for engineers, scientists, and mathematicians with a background in elementary ordinary differential equations and calculus.

Partial Differential Equations and Solitary Waves Theory - Abdul-Majid Wazwaz 2010-05-28

"Partial Differential Equations and Solitary Waves Theory" is a self-contained book divided into two parts: Part I is a coherent survey bringing together newly developed methods for solving PDEs. While some traditional techniques are presented, this part does not require thorough understanding of abstract theories or compact concepts. Well-selected worked examples and exercises shall guide the reader through the text. Part II provides an extensive exposition of the solitary waves theory. This part handles nonlinear evolution equations by methods such as Hirota's bilinear method or the tanh-coth method. A self-contained treatment is presented to discuss complete integrability of a wide class of nonlinear equations. This part presents in an accessible manner a

systematic presentation of solitons, multi-soliton solutions, kinks, peakons, cuspons, and compactons. While the whole book can be used as a text for advanced undergraduate and graduate students in applied mathematics, physics and engineering, Part II will be most useful for graduate students and researchers in mathematics, engineering, and other related fields. Dr. Abdul-Majid Wazwaz is a Professor of Mathematics at Saint Xavier University, Chicago, Illinois, USA.

Numerical Analysis - Richard L. Burden 2010-08-09

This well-respected text gives an introduction to the theory and application of modern numerical approximation techniques for students taking a one- or two-semester course in numerical analysis. With an accessible treatment that only requires a calculus prerequisite, Burden and Faires explain how, why, and when approximation techniques can be expected to work, and why, in some situations, they fail. A wealth of examples and exercises develop students' intuition, and demonstrate the subject's practical applications to important everyday problems in math, computing, engineering, and physical science disciplines. The first book of its kind built from the ground up to serve a diverse undergraduate audience, three decades later Burden and Faires remains the definitive introduction to a vital and practical subject. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Differential Equations and Boundary Value Problems - C. Henry Edwards 2018-01-30

NOTE: This edition features the same content as the traditional text in a convenient, three-hole-punched, loose-leaf version. Books a la Carte also offer a great value; this format costs significantly less than a new textbook. Before purchasing, check with your instructor or review your course syllabus to ensure that you select the correct ISBN. For Books a la Carte editions that include MyLab(tm) or Mastering(tm), several versions may exist for each title--including customized versions for individual schools--and registrations are not transferable. In addition, you may need a Course ID, provided by your instructor, to register for and use MyLab or Mastering platforms. For one-semester sophomore- or

junior-level courses in Differential Equations. The right balance between concepts, visualization, applications, and skills - now available with MyLab Math Differential Equations: Computing and Modeling provides the conceptual development and geometric visualization of a modern differential equations course that is essential to science and engineering students. It balances traditional manual methods with the new, computer-based methods that illuminate qualitative phenomena - a comprehensive approach that makes accessible a wider range of more realistic applications. The book starts and ends with discussions of mathematical modeling of real-world phenomena, evident in figures, examples, problems, and applications throughout. For the first time, MyLab(tm) Math is available for the 5th Edition, providing online homework with immediate feedback, the complete eText, and more. Also available with MyLab Math MyLab(tm) Math is the teaching and learning platform that empowers instructors to reach every student. By combining trusted author content with digital tools and a flexible platform, MyLab Math personalizes the learning experience and improves results for each student. Note: You are purchasing a standalone product; MyLab Math does not come packaged with this content. Students, if interested in purchasing this title with MyLab Math, ask your instructor to confirm the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. If you would like to purchase both the physical text and MyLab Math, search for: 0134996038 / 9780134996035 Differential Equations and Boundary Value Problems: Computing and Modeling Media Update, Books a la Carte Edition and MyLab Math with Pearson eText -- Title-Specific Access Card Package, 5/e Package consists of: 0134872983 / 9780134872988 Differential Equations and Boundary Value Problems: Computing and Modeling Media Update, Books a la Carte Edition 0134872975 / 9780134872971 MyLab Math plus Pearson eText - Standalone Access Card - for Differential Equations and Boundary Value Problems: Computing and Modeling Media Update

Nonlinear Dynamics and Chaos - Steven H. Strogatz 2018-05-04

This textbook is aimed at newcomers to nonlinear dynamics and chaos,

especially students taking a first course in the subject. The presentation stresses analytical methods, concrete examples, and geometric intuition. The theory is developed systematically, starting with first-order differential equations and their bifurcations, followed by phase plane analysis, limit cycles and their bifurcations, and culminating with the Lorenz equations, chaos, iterated maps, period doubling, renormalization, fractals, and strange attractors.

Finite Difference Methods for Ordinary and Partial Differential Equations

- Randall J. LeVeque 2007-01-01

This book introduces finite difference methods for both ordinary differential equations (ODEs) and partial differential equations (PDEs) and discusses the similarities and differences between algorithm design and stability analysis for different types of equations. A unified view of stability theory for ODEs and PDEs is presented, and the interplay between ODE and PDE analysis is stressed. The text emphasizes standard classical methods, but several newer approaches also are introduced and are described in the context of simple motivating examples.

Partial Differential Equations for Scientists and Engineers - Stanley J. Farlow 2012-03-08

Practical text shows how to formulate and solve partial differential equations. Coverage of diffusion-type problems, hyperbolic-type problems, elliptic-type problems, numerical and approximate methods. Solution guide available upon request. 1982 edition.

Mathematical Modeling in Chemical Engineering - Anders Rasmuson 2014-03-20

A solid introduction, enabling the reader to successfully formulate, construct, simplify, evaluate and use mathematical models in chemical engineering.

An Introduction to Fourier Analysis - Russell L. Herman 2016-09-19

This book helps students explore Fourier analysis and its related topics, helping them appreciate why it pervades many fields of mathematics, science, and engineering. This introductory textbook was written with mathematics, science, and engineering students with a background in

calculus and basic linear algebra in mind. It can be used as a textbook for undergraduate courses in Fourier analysis or applied mathematics, which cover Fourier series, orthogonal functions, Fourier and Laplace transforms, and an introduction to complex variables. These topics are tied together by the application of the spectral analysis of analog and discrete signals, and provide an introduction to the discrete Fourier transform. A number of examples and exercises are provided including implementations of Maple, MATLAB, and Python for computing series expansions and transforms. After reading this book, students will be familiar with:

- Convergence and summation of infinite series
- Representation of functions by infinite series
- Trigonometric and Generalized Fourier series
- Legendre, Bessel, gamma, and delta functions
- Complex numbers and functions
- Analytic functions and integration in the complex plane
- Fourier and Laplace transforms.
- The relationship between analog and digital signals

Dr. Russell L. Herman is a professor of Mathematics and Professor of Physics at the University of North Carolina Wilmington. A recipient of several teaching awards, he has taught introductory through graduate courses in several areas including applied mathematics, partial differential equations, mathematical physics, quantum theory, optics, cosmology, and general relativity. His research interests include topics in nonlinear wave equations, soliton perturbation theory, fluid dynamics, relativity, chaos and dynamical systems.

Partial Differential Equations - A. K. Nandakumaran 2020-10-29

Suitable for both senior undergraduate and graduate students, this is a self-contained book dealing with the classical theory of the partial differential equations through a modern approach; requiring minimal previous knowledge. It represents the solutions to three important equations of mathematical physics - Laplace and Poisson equations, Heat or diffusion equation, and wave equations in one and more space dimensions. Keen readers will benefit from more advanced topics and many references cited at the end of each chapter. In addition, the book covers advanced topics such as Conservation Laws and Hamilton-Jacobi Equation. Numerous real-life applications are interspersed throughout

the book to retain readers' interest.

Advanced Calculus - Lynn Harold Loomis 2014-02-26

An authorised reissue of the long out of print classic textbook, Advanced Calculus by the late Dr Lynn Loomis and Dr Shlomo Sternberg both of Harvard University has been a revered but hard to find textbook for the advanced calculus course for decades. This book is based on an honors course in advanced calculus that the authors gave in the 1960's. The foundational material, presented in the unstarred sections of Chapters 1 through 11, was normally covered, but different applications of this basic material were stressed from year to year, and the book therefore contains more material than was covered in any one year. It can accordingly be used (with omissions) as a text for a year's course in advanced calculus, or as a text for a three-semester introduction to analysis. The prerequisites are a good grounding in the calculus of one variable from a mathematically rigorous point of view, together with some acquaintance with linear algebra. The reader should be familiar with limit and continuity type arguments and have a certain amount of mathematical sophistication. As possible introductory texts, we mention Differential and Integral Calculus by R Courant, Calculus by T Apostol, Calculus by M Spivak, and Pure Mathematics by G Hardy. The reader should also have some experience with partial derivatives. In overall plan the book divides roughly into a first half which develops the calculus (principally the differential calculus) in the setting of normed vector spaces, and a second half which deals with the calculus of differentiable manifolds.

Solution Techniques for Elementary Partial Differential Equations

- Christian Constanda 2018-09-03

Solution Techniques for Elementary Partial Differential Equations, Third Edition remains a top choice for a standard, undergraduate-level course on partial differential equations (PDEs). Making the text even more user-friendly, this third edition covers important and widely used methods for solving PDEs. New to the Third Edition New sections on the series expansion of more general functions, other problems of general second-order linear equations, vibrating string with other types of boundary

conditions, and equilibrium temperature in an infinite strip Reorganized sections that make it easier for students and professors to navigate the contents Rearranged exercises that are now at the end of each section/subsection instead of at the end of the chapter New and improved exercises and worked examples A brief Mathematica® program for nearly all of the worked examples, showing students how to verify results by computer This bestselling, highly praised textbook uses a streamlined, direct approach to develop students' competence in solving PDEs. It offers concise, easily understood explanations and worked examples that allow students to see the techniques in action.

Student Solutions Manual, Partial Differential Equations &

Boundary Value Problems with Maple - George A. Articolo
2009-07-22

Student Solutions Manual, Partial Differential Equations & Boundary Value Problems with Maple

Ordinary Differential Equations - Jack K. Hale 2009-01-01

This rigorous treatment prepares readers for the study of differential equations and shows them how to research current literature. It emphasizes nonlinear problems and specific analytical methods. 1969 edition.

A First Course in Differential Equations with Modeling

Applications - Dennis G. Zill 2012-03-15

A FIRST COURSE IN DIFFERENTIAL EQUATIONS WITH MODELING APPLICATIONS, 10th Edition strikes a balance between the analytical, qualitative, and quantitative approaches to the study of differential equations. This proven and accessible text speaks to beginning engineering and math students through a wealth of pedagogical aids, including an abundance of examples, explanations, Remarks boxes, definitions, and group projects. Written in a straightforward, readable, and helpful style, this book provides a thorough treatment of boundary-value problems and partial differential equations. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Handbook of Differential Equations - Daniel Zwillinger 1998

This book compiles the most widely applicable methods for solving and approximating differential equations. as well as numerous examples showing the methods use. Topics include ordinary differential equations, symplectic integration of differential equations, and the use of wavelets when numerically solving differential equations. For nearly every technique, the book provides: The types of equations to which the method is applicable The idea behind the method The procedure for carrying out the method At least one simple example of the method Any cautions that should be exercised Notes for more advanced users References to the literature for more discussion or more examples, including pointers to electronic resources, such as URLs

Linear Partial Differential Equations for Scientists and Engineers - Tyn Myint-U 2007-04-05

This significantly expanded fourth edition is designed as an introduction to the theory and applications of linear PDEs. The authors provide fundamental concepts, underlying principles, a wide range of applications, and various methods of solutions to PDEs. In addition to essential standard material on the subject, the book contains new material that is not usually covered in similar texts and reference books. It also contains a large number of worked examples and exercises dealing with problems in fluid mechanics, gas dynamics, optics, plasma physics, elasticity, biology, and chemistry; solutions are provided.

Introduction to Partial Differential Equations - Peter J. Olver
2013-11-08

This textbook is designed for a one year course covering the fundamentals of partial differential equations, geared towards advanced undergraduates and beginning graduate students in mathematics, science, engineering, and elsewhere. The exposition carefully balances solution techniques, mathematical rigor, and significant applications, all illustrated by numerous examples. Extensive exercise sets appear at the end of almost every subsection, and include straightforward computational problems to develop and reinforce new techniques and results, details on theoretical developments and proofs, challenging projects both computational and conceptual, and supplementary material

that motivates the student to delve further into the subject. No previous experience with the subject of partial differential equations or Fourier theory is assumed, the main prerequisites being undergraduate calculus, both one- and multi-variable, ordinary differential equations, and basic linear algebra. While the classical topics of separation of variables, Fourier analysis, boundary value problems, Green's functions, and special functions continue to form the core of an introductory course, the inclusion of nonlinear equations, shock wave dynamics, symmetry and similarity, the Maximum Principle, financial models, dispersion and solutions, Huygens' Principle, quantum mechanical systems, and more make this text well attuned to recent developments and trends in this active field of contemporary research. Numerical approximation schemes are an important component of any introductory course, and the text covers the two most basic approaches: finite differences and finite elements.

Beginning Partial Differential Equations - Peter V. O'Neil 2014-05-07

A broad introduction to PDEs with an emphasis on specialized topics and applications occurring in a variety of fields. Featuring a thoroughly revised presentation of topics, *Beginning Partial Differential Equations, Third Edition* provides a challenging, yet accessible, combination of techniques, applications, and introductory theory on the subject of partial differential equations. The new edition offers nonstandard coverage on material including Burger's equation, the telegraph equation, damped wave motion, and the use of characteristics to solve nonhomogeneous problems. The Third Edition is organized around four themes: methods of solution for initial-boundary value problems; applications of partial differential equations; existence and properties of solutions; and the use of software to experiment with graphics and carry out computations. With a primary focus on wave and diffusion processes, *Beginning Partial Differential Equations, Third Edition* also includes: Proofs of theorems incorporated within the topical presentation, such as the existence of a solution for the Dirichlet problem. The incorporation of Maple™ to perform computations and experiments. Unusual applications, such as Poe's pendulum. Advanced

topical coverage of special functions, such as Bessel, Legendre polynomials, and spherical harmonics. Fourier and Laplace transform techniques to solve important problems. *Beginning of Partial Differential Equations, Third Edition* is an ideal textbook for upper-undergraduate and first-year graduate-level courses in analysis and applied mathematics, science, and engineering.

Applied Partial Differential Equations with Fourier Series and Boundary Value Problems - Richard Haberman 2013-11-01

This text emphasizes the physical interpretation of mathematical solutions and introduces applied mathematics while presenting differential equations. Coverage includes Fourier series, orthogonal functions, boundary value problems, Green's functions, and transform methods. This text is ideal for students in science, engineering, and applied mathematics.

Partial Differential Equations and Boundary Value Problems - Nakhlé H. Asmar 2000

Packed with examples, this book provides a smooth transition from elementary ordinary differential equations to more advanced concepts. Asmar's relaxed style and emphasis on applications make the material understandable even for readers with limited exposure to topics beyond calculus. Encourages the use of computer resources for illustrating results and applications, but is also suitable for use without computer access. Includes additional specialized topics that can be read as desired, and that can be read independently of each other. Denotes exercises requiring use of a computer with computer icons, asking readers to investigate problems using computer-generated graphics and to generate numerical data that cannot be computed by hand. Offers Mathematica files for download from the author's Web site; can be accessed through the Prentice Hall address <http://www.prenhall.com/pubguide/>. For engineers or anyone looking to brush up on their advanced mathematics skills.

Applied Partial Differential Equations with Fourier Series and Boundary Value Problems (Classic Version) - Richard Haberman 2018-03-15

This title is part of the Pearson Modern Classics series. Pearson Modern Classics are acclaimed titles at a value price. Please visit www.pearsonhighered.com/math-classics-series for a complete list of titles. *Applied Partial Differential Equations with Fourier Series and Boundary Value Problems* emphasizes the physical interpretation of mathematical solutions and introduces applied mathematics while presenting differential equations. Coverage includes Fourier series, orthogonal functions, boundary value problems, Green's functions, and transform methods. This text is ideal for readers interested in science, engineering, and applied mathematics.

Partial Differential Equations with Fourier Series and Boundary Value Problems - Nakhle H. Asmar 2017-03-23

Rich in proofs, examples, and exercises, this widely adopted text emphasizes physics and engineering applications. The Student Solutions Manual can be downloaded free from Dover's site; the Instructor Solutions Manual is available upon request. 2004 edition, with minor revisions.

Introduction to Differential Equations with Dynamical Systems - Stephen L. Campbell 2011-10-14

Many textbooks on differential equations are written to be interesting to the teacher rather than the student. *Introduction to Differential Equations with Dynamical Systems* is directed toward students. This concise and up-to-date textbook addresses the challenges that undergraduate mathematics, engineering, and science students experience during a first course on differential equations. And, while covering all the standard parts of the subject, the book emphasizes linear constant coefficient equations and applications, including the topics essential to engineering students. Stephen Campbell and Richard Haberman--using carefully worded derivations, elementary explanations, and examples, exercises, and figures rather than theorems and proofs--have written a book that makes learning and teaching differential equations easier and more relevant. The book also presents elementary dynamical systems in a unique and flexible way that is suitable for all courses, regardless of length.

Handbook of Linear Partial Differential Equations for Engineers and Scientists - Andrei D. Polyinin 2001-11-28

Following in the footsteps of the authors' bestselling *Handbook of Integral Equations and Handbook of Exact Solutions for Ordinary Differential Equations*, this handbook presents brief formulations and exact solutions for more than 2,200 equations and problems in science and engineering. Parabolic, hyperbolic, and elliptic equations with **Mathematical Models** - Richard Haberman 1998-12-01

The author uses mathematical techniques to give an in-depth look at models for mechanical vibrations, population dynamics, and traffic flow. **Applied Partial Differential Equations** - Paul DuChateau 2012-10-30
DIVBook focuses mainly on boundary-value and initial-boundary-value problems on spatially bounded and on unbounded domains; integral transforms; uniqueness and continuous dependence on data, first-order equations, and more. Numerous exercises included. /div

Applied Partial Differential Equations - J. David Logan 2012-12-06

This textbook is for the standard, one-semester, junior-senior course that often goes by the title "Elementary Partial Differential Equations" or "Boundary Value Problems;" The audience usually consists of students in mathematics, engineering, and the physical sciences. The topics include derivations of some of the standard equations of mathematical physics (including the heat equation, the wave equation, and the Laplace's equation) and methods for solving those equations on bounded and unbounded domains. Methods include eigenfunction expansions or separation of variables, and methods based on Fourier and Laplace transforms. Prerequisites include calculus and a post-calculus differential equations course. There are several excellent texts for this course, so one can legitimately ask why one would wish to write another. A survey of the content of the existing titles shows that their scope is broad and the analysis detailed; and they often exceed five hundred pages in length. These books generally have enough material for two, three, or even four semesters. Yet, many undergraduate courses are one-semester courses. The author has often felt that students become a little uncomfortable when an instructor jumps around in a long volume searching for the right

topics, or only partially covers some topics; but they are secure in completely mastering a short, well-defined introduction. This text was

written to provide a brief, one-semester introduction to partial differential equations.