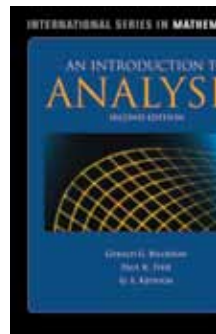
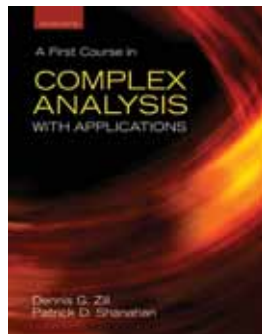
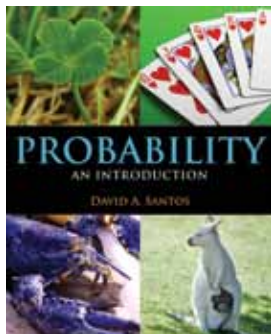
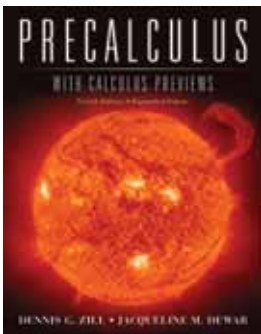
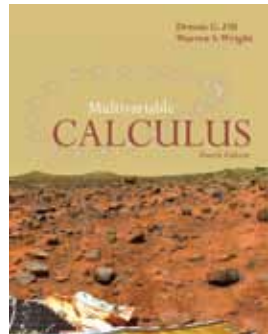
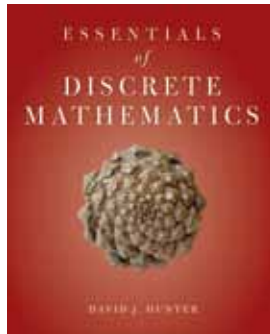
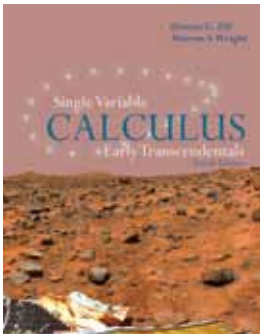
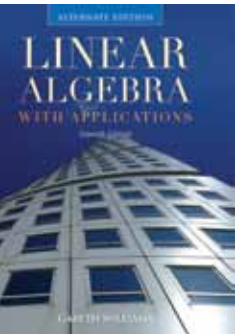
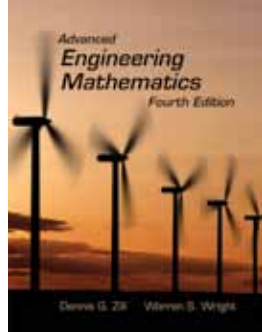
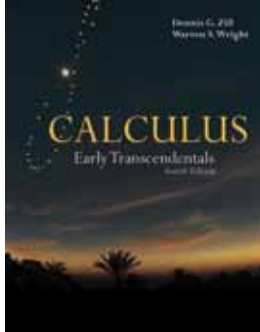
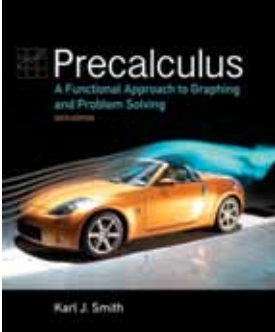


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## Precalculus with Calculus Previews

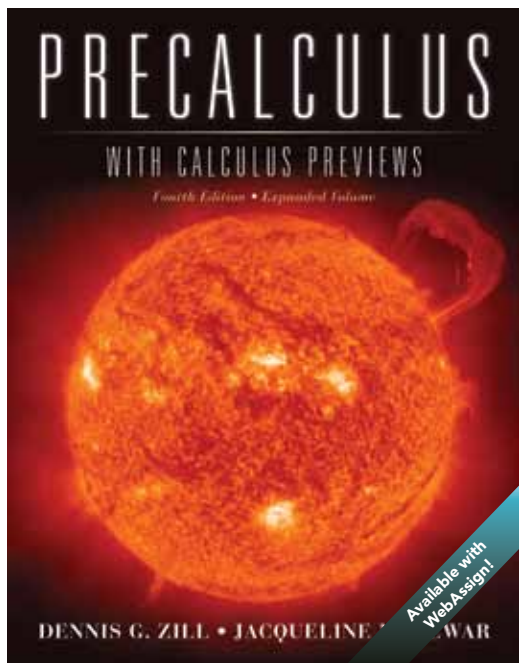
*Expanded Volume  
Fourth Edition*

**Dennis G. Zill**, Loyola Marymount  
University

**Jacqueline M. Dewar**, Loyola  
Marymount University

Available with WebAssign!

Building off the success of Zill and Dewar's popular *Precalculus with Calculus Previews, Fourth Edition*, the new Expanded Volume includes all the outstanding features and learning tools found in the original text while incorporating additional coverage that some courses may require. With a continued aim to keep the text complete, yet concise, the authors included three additional chapters making it a clear choice for many mainstream courses.



### Key Features

- Available with WebAssign
- Student-friendly, four-color text offers numerous exercise sets and examples to aid in students' learning and understanding.
- Graphs and figures throughout serve to better illuminate key concepts.
- Includes engaging problems that focus on algebra, graphing, and function theory, the sub-text of so many calculus problems.
- An **Instructor's Complete Solutions Manual** includes worked out solutions for all exercises in the text.
- A Student Companion Website offers numerous study aids and eLearning tools.

### Table of Contents

1. Inequalities, Equations, and Graphs
2. Functions
3. Polynomial and Rational Functions
4. Trigonometric Functions
5. Triangle Trigonometry
6. Exponential and Logarithmic Functions
7. Conic Sections
8. Systems of Equations and Inequalities
9. Sequences and Series

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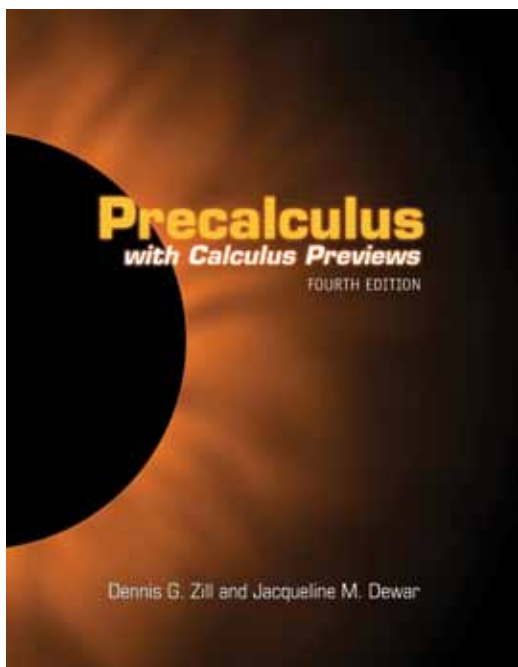
# Precalculus with Calculus Previews

*Fourth Edition*

**Dennis G. Zill**, Loyola Marymount University

**Jacqueline M. Dewar**, Loyola Marymount University

Perfect for the one-term course, *Precalculus with Calculus Previews, Fourth Edition* provides a complete, yet manageable, introduction to precalculus concepts while focusing on important topics that will be of direct and immediate use in most calculus courses. The exercise sets throughout the text include engaging problems that focus on algebra, graphing, and function theory, the sub-text of so many calculus problems. The authors are careful to use the terminology of calculus in an informal and comprehensible way to facilitate the student's successful transition into future calculus courses.



## Key Features

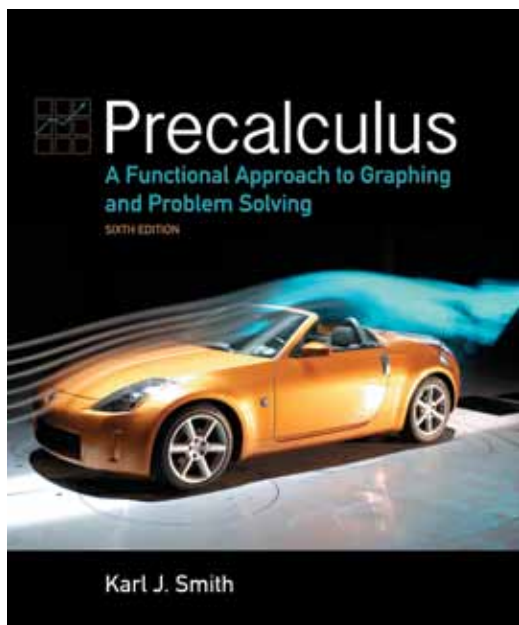
- **Translating Words into Functions** section illustrates how to translate a verbal description into a symbolic representation of a function and demonstrates these translations with actual calculus problems.
- The **Calculus Preview** found at the end of each chapter offers students a glimpse of a single calculus concept along with the algebraic, logarithmic and trigonometric manipulations that are necessary for the successful completion of typical problems related to that concept.
- **Notes from the Classroom** sections include remarks that clarify alternative terminology, reinforce important concepts, common errors, solution procedures, calculator use, and more.

## Table of Contents

1. Inequalities, Equations, and Graphs
2. Functions
3. Polynomial and Rational Functions
4. Trigonometric Functions
5. Exponential and Logarithmic Functions
6. Conic Sections

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## Precalculus

### *A Functional Approach to Graphing and Problem Solving* Sixth Edition

**Karl J. Smith**

*Precalculus: A Functional Approach to Graphing and Problem Solving* prepares students for the concepts and applications they will encounter in future calculus courses. In far too many texts, process is stressed over insight and understanding, and students move on to calculus ill equipped to think conceptually about its essential ideas. This text provides sound development of the important mathematical underpinnings of calculus, stimulating problems and exercises, and a well-developed, engaging pedagogy. Students will leave with a clear understanding of what lies ahead in their future calculus courses. Instructors will find that Smith's straightforward, student-friendly presentation provides exactly what they have been looking for in a text!

### Key Features

- **Street sign** and **warning sign** icons point out common mistakes and pitfalls.
- **What is Wrong?** problems help students see common mistakes and think critically.
- **Modeling Application** problems are found throughout the text to teach the modeling process.
- **Problems From Calculus** are found throughout the book and introduce students to problems they may find in their future calculus courses.
- Extremely student friendly with strong pedagogical elements.
- Definitions, procedures, and properties are enclosed in color-coded boxes.

### Table of Contents

#### Part I: Fundamental Concepts

1. Algebraic and Geometrical Foundations

#### Part II: Functions and Graphing

2. Functions with Problem Solving
3. Polynomial Functions
4. Additional Functions

#### Part III: Trigonometry

5. Trigonometric Functions
6. Trigonometric Equations And Identities

#### Part IV: Advanced Algebra Topics And Analytic Geometry

7. Sequences, Systems, and Matrices
8. Analytic Geometry
9. Vectors and Solid Analytic Geometry

#### Appendices

- A. Field Properties
- B. Complex Numbers
- C. Mathematical Induction
- D. Binomial Theorem
- E. Significant Digits
- F. Determinants and Cramer's Rule
- G. Geometry Review
- H. Library of Curves
- I. Answers

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# Calculus

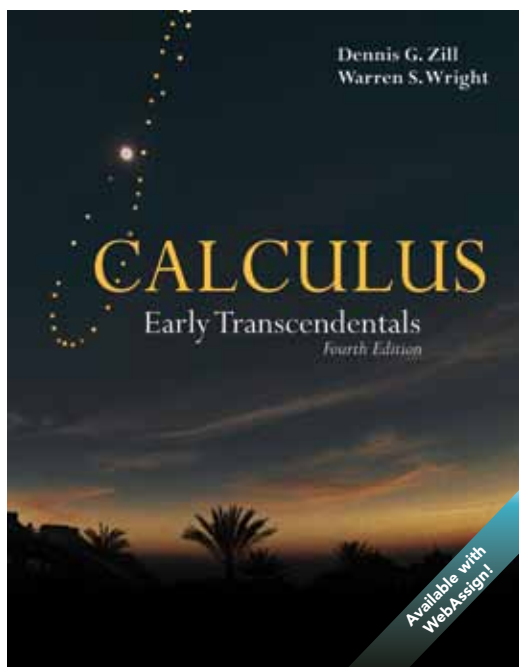
## Early Transcendentals

### Fourth Edition

**Dennis G. Zill**, Loyola Marymount University

**Warren S. Wright**, Loyola Marymount University

Appropriate for the traditional three-term college calculus course, *Calculus: Early Transcendentals, Fourth Edition* provides the student-friendly presentation and robust examples and problem sets for which Dennis Zill is known. This outstanding revision incorporates all of the exceptional learning tools that have made Zill's many texts a resounding success. He carefully blends the theory and application of important concepts while offering modern applications and numerous problem-solving skills.



## Key Features

- Introduces calculus concepts and topics in a clear concise manner for maximum student comprehension and retention.
- Straightforward exposition at a level accessible to today's college students.
- Includes examples and applications ideal for science and engineering students.
- Concise reasoning behind every calculus concept is presented.
- **The Test Yourself** section is a self-test consisting of 56 questions on four broad areas of precalculus, and encourages students to review essential prerequisites.
- **Notes from the Classroom** sections are informal discussions that are aimed at the student and discuss common algebraic, procedural, and notational errors.

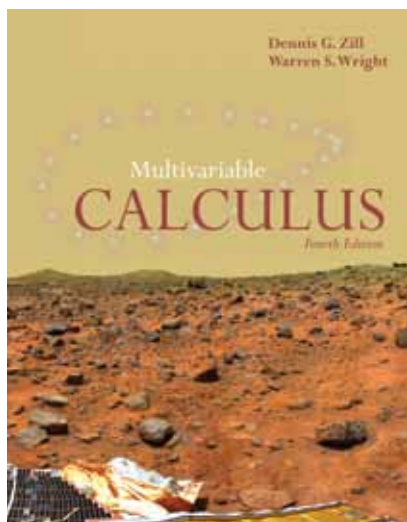
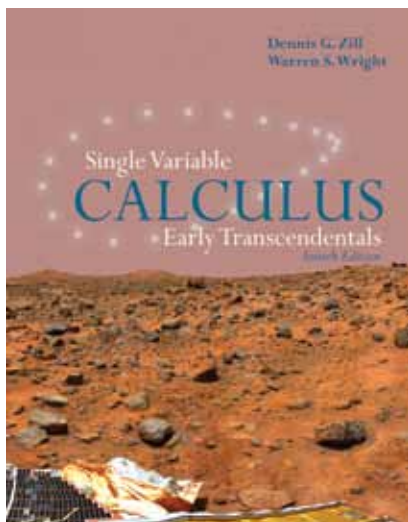
## Table of Contents

- Chapter 1 Functions
- Chapter 2 Limit of a Function
- Chapter 3 The Derivative
- Chapter 4 Applications of the Derivative
- Chapter 5 Integrals
- Chapter 6 Applications of the Integral
- Chapter 7 Techniques of Integration
- Chapter 8 First-Order Differential Equations
- Chapter 9 Sequences and Series
- Chapter 10 Conics and Polar Coordinates
- Chapter 11 Vectors and 3-Space
- Chapter 12 Vector-Valued Functions
- Chapter 13 Partial Derivatives
- Chapter 14 Multiple Integrals
- Chapter 15 Vector Integral Calculus
- Chapter 16 Higher-Order Differential Equations

\*Chapter titles shown in blue indicate chapters found in *Single Variable Calculus: Early Transcendentals*. Chapter titles shown in red indicate chapters found in *Multivariable Calculus*. Please note that chapters 9 and 10 appear in both volumes.

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## Single Variable Calculus

### Early Transcendentals

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**Dennis G. Zill**, Loyola Marymount University  
**Warren S. Wright**, Loyola Marymount University

Dennis Zill's mathematics texts are renowned for their student-friendly presentation and robust examples and problem sets. The *Fourth Edition* of **Single Variable Calculus: Early Transcendentals** is no exception. This outstanding revision incorporates all of the exceptional learning tools that have made Zill's texts a resounding success. Appropriate for the first two terms in the college calculus sequence, students are provided with a solid foundation in important mathematical concepts and problem solving skills, while maintaining the level of rigor expected of a Calculus course.

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## Multivariable Calculus

### Fourth Edition

**Dennis G. Zill**, Loyola Marymount University  
**Warren S. Wright**, Loyola Marymount University

Appropriate for the third semester in the college calculus sequence, the *Fourth Edition* of **Multivariable Calculus** maintains student-friendly writing style and robust exercises and problem sets that Dennis Zill is famous for. Ideal as a follow-up companion to Zill first volume, or as a stand-alone text, this exceptional revision presents the topics typically covered in the traditional third course, including Vector-valued Functions, Differential Calculus of Functions of Several Variables, Integral Calculus of Functions of Several Variables, Vector Integral Calculus, and an Introduction to Differential Equations.

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## Multivariable and Vector Calculus

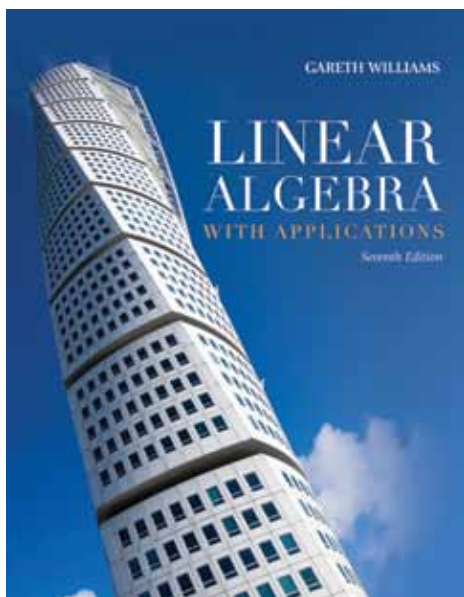
### An Introduction

**David Santos**, Community College of Philadelphia

Designed for mainstream courses in multivariable calculus or vector calculus at the undergraduate level, this text covers theoretical underpinnings of multivariable and vector calculus, and applies these concepts to practical problems.

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## Linear Algebra with Applications

*Seventh Edition*

**Gareth Williams**, Stetson University

Designed for the introductory course in linear algebra, this text provides a flexible blend of theory, important numerical techniques and interesting applications, making it ideal for mathematicians, engineers, scientists, and a variety of other majors. It continues to educate and enlighten students, leading to a mastery of the mathematics and an understanding of how to apply it.

### Key Features

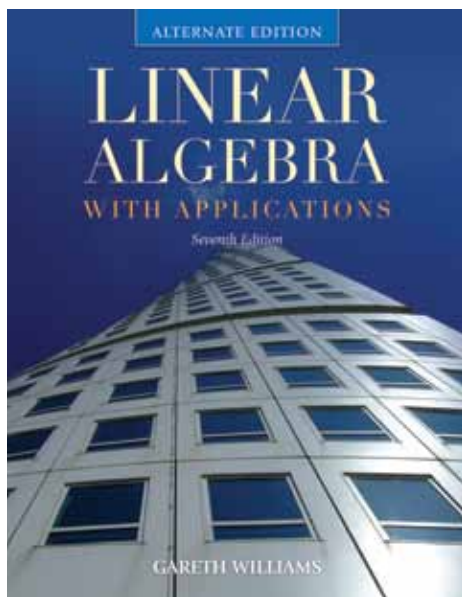
- Presents an early introduction of concepts such as linear combination, closure, basis and dimension.
- Includes discussions of the role of linear algebra in many modern applications.
- A MATLAB manual is included as an appendix.

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## Linear Algebra with Applications

*Alternate Seventh Edition*

**Gareth Williams**, Stetson University

The introductory course in linear algebra can be taught in many ways and the order in which topics are offered may vary depending upon the needs of the students. Building upon the sequence of topics of the popular 5th Edition, this text provides instructors with an alternative presentation of course material. In this edition earlier chapters cover systems of linear equations, matrices, and determinants. The more abstract material on vector spaces starts later in Chapter 4 with the introduction of the vector space  $\mathbb{R}^n$ . This leads directly into general vector spaces and linear transformations. This order of topics is ideal for those preparing to apply linear equations and matrices in their own fields.

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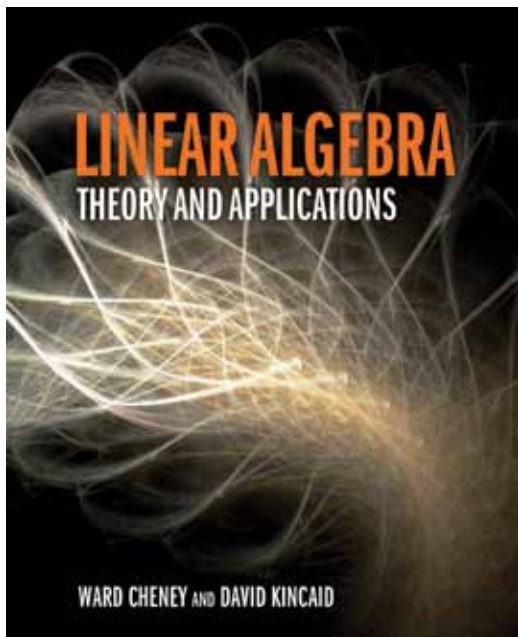
## Linear Algebra

### Theory and Applications

**Ward Cheney**, University of Texas,  
Austin

**David R. Kincaid**, University of Texas,  
Austin

Motivated by their desire for a single text that meets the various requirements found in linear algebra courses, renowned writing team Ward Cheney and David Kincaid have developed this multi-faceted introduction to linear algebra. Focusing on a comprehensive blend between theory and application, this text guides theoretically-oriented mathematics students as they devise proofs and deal with abstractions. Likewise, this unique blend appeals to applications-oriented science and engineering students with its numerous problem sets that focus on understanding and learning vector spaces, matrices, linear transformations, and



other tools of applied linear algebra. With its flexible design, *Linear Algebra: Theory and Applications* is an ideal text for instructors who wish to make their own choice of what material to emphasize, and includes over 3100 problems and homework assignments of great variety to highlight that choice

### Key Features

- An extremely flexible presentation allows instructors to use this text in a variety of course settings
- Numerous examples throughout the text show how problems from engineering, biology, natural science, demography, etc. can be solved using linear algebra.
- The text features hundreds of problems in each section, totally over 3000 problems throughout the text. Problem types include: regular problems, true-false, multiple-choice, and project-problems involving computer programming.
- The text encourages students to learn at least one of the powerful mathematical software tools, such as Matlab, Maple and Mathematica. Instructors have the flexibility to determine how to use these valuable resources in their course.
- *Footnotes* throughout the text refer to historical events and personages in the field of linear algebra.
- A Student Solutions Manual provides worked solutions to selected exercises from the text.

### Table of Contents

#### Chapter 1: Systems of Linear Equations

- 1.1 Solving Systems of Linear Equations
- 1.2 Vectors and Matrices
- 1.3 Kernels, Rank, Homogeneous Equations

#### Chapter 2: Vector Spaces and Transformations

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- 2.2 Lines, Planes, and Hyperplanes
- 2.3 Linear Transformations
- 2.4 General Vector Spaces

#### Chapter 3: Matrix Operations

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- 3.2 Matrix Inverses

#### Chapter 4: Determinants

- 4.1 Determinants: Introduction
- 4.2 Determinants: Properties

#### Chapter 5: Vector Spaces

- 5.1 Column, Row, and Null Spaces
- 5.2 Bases and Dimension
- 5.3 Coordinate Systems

#### Chapter 6: Eigensystems

- 6.1 Eigenvalues and Eigenvectors

#### Chapter 7: Inner Product Vector Spaces

- 7.1 Inner Product Spaces
- 7.2 Orthogonality

#### Chapter 8: Additional Topics

- 8.1 Hermitian Matrices and Spectral Thm.
- 8.2 Matrix Factorizations and Block Matrices
- 8.3 Iterative Methods for Linear Equations

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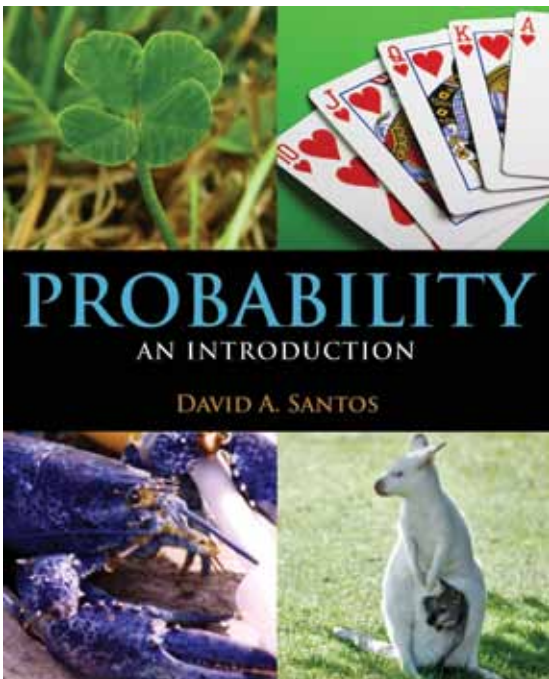
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## Probability

### *An Introduction*

**David Santos**, Community College of Philadelphia

**Probability: An Introduction** provides the fundamentals of probability, requiring minimal algebraic and precalculus skills from the reader. It begins with an introduction to sets and set operations, spends time explaining counting techniques, and then presents probability in an axiomatic way, never losing sight of elucidating the subject through very concrete examples. The book contains numerous examples and solved exercises taken from various fields. A CD-ROM with computer code, project files, and third-party applications accompanies the text.



### Key Features

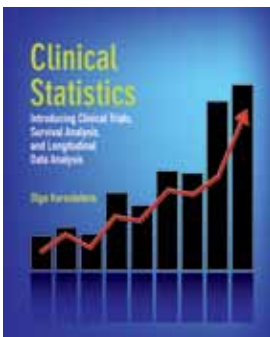
- Concepts are illustrated with numerous applied examples and exercises
- Computer explorations using MATLAB or Maple are at the end of the each chapter to illustrate various topics
- Optional chapter in geometric probability, random walks, game theory and Markov Chains

### Table of Contents

1. Sets and Functions
2. Combinatorics
3. Probability
4. Conditional Probability
5. Complete Random Variables
6. Densities

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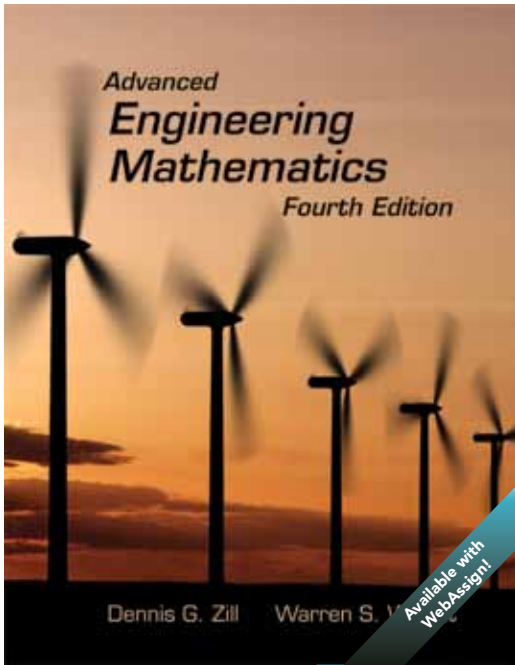
### *Introducing Clinical Trials, Survival Analysis, and Longitudinal Data Analysis*

**Olga Korosteleva**, California State University, Long Beach

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# Advanced Engineering Mathematics

*Fourth Edition*

**Dennis G. Zill**, Loyola Marymount University

**Warren S. Wright**, Loyola Marymount University

Now with a full-color design, the new *Fourth Edition* provides an in-depth overview of the many mathematical topics necessary for students planning a career in engineering or the sciences. A key strength of this text is Zill's emphasis on differential equations as mathematical models, discussing the constructs and pitfalls of each. The *Fourth Edition* is comprehensive, yet flexible, to meet the unique needs of various course offerings ranging from ordinary differential equations to vector calculus.

## Key Features

- A CD-ROM includes material on probability and statistics.
- Includes a new section on Green's functions for ordinary differential equations.
- Includes modern projects and applications.
- New full-color design and art program.
- Now available with WebAssign
- A Student Resource Manual and Complete Instructor Solutions Manual are available

## Table of Contents

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6. Numerical Solutions of Ordinary Differential Equations

Part 2: Vectors, Matrices, and Vector Calculus

7. Vectors.
8. Matrices
9. Vector Calculus

Part 3: Systems of Differential Equations

10. Systems of Linear Differential Equations
11. Systems of Nonlinear Differential Equations

Part 4: Fourier Series and Partial Differential Equations

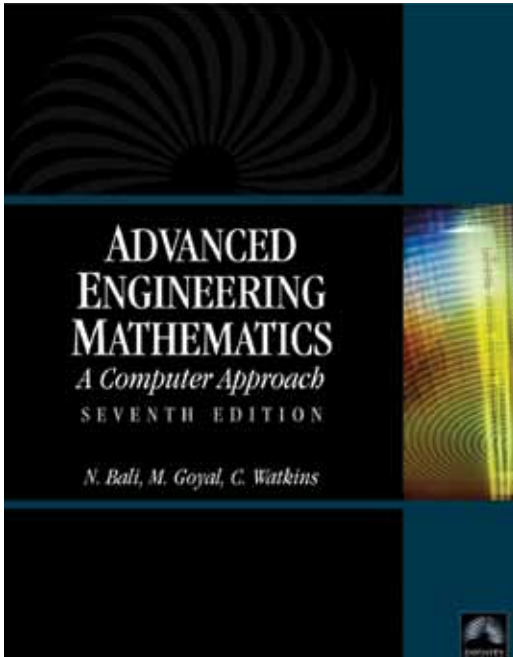
12. Orthogonal Functions and Fourier Series
13. Boundary-Value Problems in Rectangular Coordinates
14. Boundary-Value Problems in Other Coordinate Systems
15. Integral Transform Method
16. Numerical Solutions of Partial Differentials Equations

Part 5: Complex Analysis

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18. Integration in the Complex Plane
19. Series and Residues
20. Conformal Mappings

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⊕ Instructor Resources: SM, TB ⊕ Student Resources: WA, SR



## Advanced Engineering Mathematics

*Seventh Edition*

**N. Bali,  
Manish Goyal,  
Christopher Watkins**

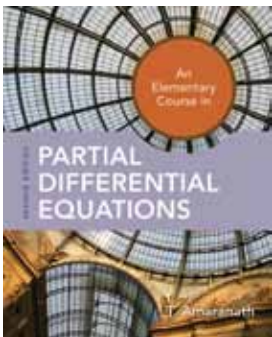
This text uses computer programs in almost every chapter to demonstrate the mathematical concepts under discussion. Designed for engineering students as well as practicing engineers and scientists, the book has hundreds of examples with in-text solutions. It covers the entire sequence of mathematical topics needed by the majority of university programs, including ODE, PDE, complex variables, probability/statistics, and numerical methods. The authors demonstrate how the mathematical concepts will be used in practical applications, such as Fractals, Robotics, Circuits, Membrane simulation, Collision Detection, Ray Tracing, Signal Processing, and more.

### Key Features

- Includes computer programs to demonstrate mathematical concepts used in Fractals, Robotics, Circuits, Membrane simulation, Collision Detection, Ray Tracing, Signal Processing and more.
- Accompanied by a CD-ROM with source code, calculation programs, “live” figures, and simulations.
- Provides self-instruction techniques with hundreds of examples with in text, worked-out solutions.

ISBN-13: 978-0-7637-5824-8 • Hardcover • 1600 Pages • © 2007

⊕ **Instructor Resources:** SM, PP ⊕ **Student Resources:** CD



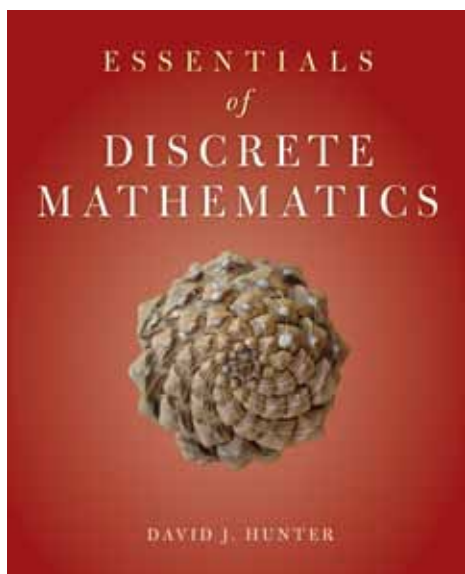
## An Elementary Course in Partial Differential Equations

*Second Edition*

**T. Amaranath**, University of Hyderabad

This text is a concise, one-term introduction to partial differential equations for the upper-level undergraduate/graduate course in Mathematics, Engineering and Science. Divided into two accessible parts, the first half of the text presents first-order differential equations while the latter half is devoted to the study of second-order partial differential equations.

ISBN-13: 978-0-7637-6244-5 • Hardcover • 156 Pages • © 2009



## Essentials of Discrete Mathematics

**David J. Hunter**, Westmont College

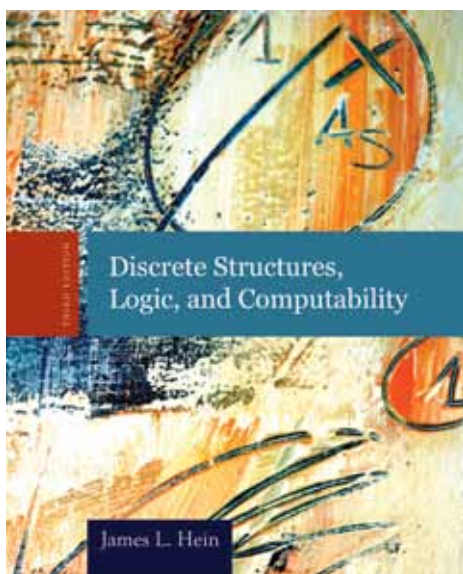
This text is ideal for a one-term discrete mathematics course to serve computer science majors, as well students from a wide range of other disciplines. The material is organized around five types of mathematical thinking: logical, relational, recursive, quantitative, and analytical. This presentation results in a coherent outline that steadily builds upon mathematical sophistication. Graphs are introduced early and referred to throughout the text, providing a richer context for examples and applications.

### Key Features

- Early introduction to graph theory.
- Includes a range of exercises designed to help students think mathematically.
- Careful attention to mathematical logic and proof techniques.
- Includes a wealth of applications

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## Discrete Structures, Logic, & Computability

*Third Edition*

**James L. Hein**, Portland State University

Thoroughly updated, the new edition introduces beginning computer science and computer engineering students to the fundamental techniques and ideas used by computer scientists today, focusing on topics from the fields of mathematics, logic, and computer science itself. Dr. Hein provides elementary introductions to those ideas and techniques that are necessary to understand and practice the art and science of computing. The text contains all the topics for discrete structures in the reports of the IEEE/ACM Joint Task Force on Computing Curricula for computer science and computer engineering programs.

### Key Features

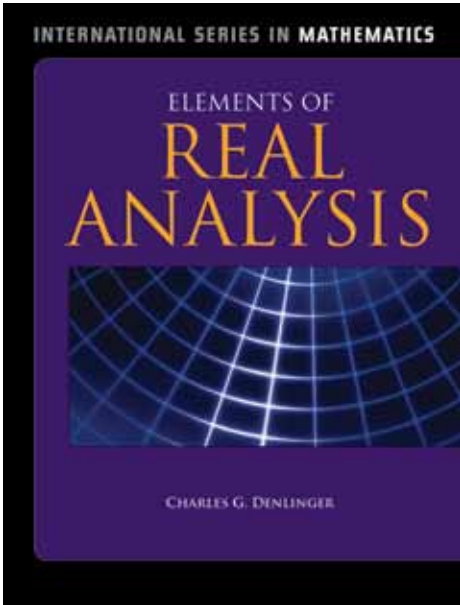
- Expanded discrete probability to a full section in Chapter 5.
- Over 100 new examples and exercises have been added.
- Revised Chapter 6 on Formal Reasoning.
- Answers for selected exercises are provided as an appendix.

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**Hardcover • 1009 Pages • © 2010**

⊕ **Instructor Resources:** SM

⊕ **Student Resources:** LM



## Elements of Real Analysis

Charles Denlinger

*Elements of Real Analysis* is a student-friendly guide to learning all the important ideas of elementary real analysis, based on the author's many years of experience teaching the subject to typical undergraduate mathematics majors. In using this book, students discover that real analysis is completely deducible from the axioms of the real number system. They learn the powerful techniques of limits of sequences as the primary entry to the concepts of analysis, and see the ubiquitous role sequences play in virtually all later topics. They become comfortable with topological ideas, and see how these concepts help unify the subject.

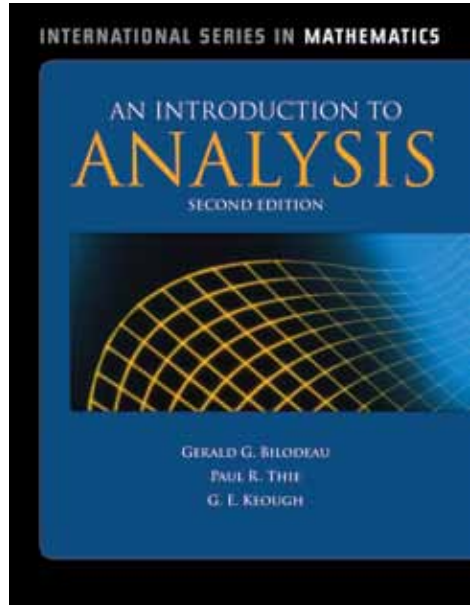
### Key Features

- Interesting, real-world examples draw students into the text.
- Provides solid, comprehensive coverage of material.
- A flexible writing style and organization allows instructors to tailor the book to meet their course needs.

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AVAILABLE April 2010



## An Introduction to Analysis

*Second Edition*

Gerald G. Bilodeau

Paul R. Thie

G. E. Keough

Completely revised and updated, the *Second Edition* presents a concise and sharply focused introduction to the basic concepts of analysis from the development of the real numbers through uniform convergences of a sequence of functions, and includes supplementary material on the calculus of functions of several variables and differential equations. This student-friendly text maintains a cautious and deliberate pace, and examples and figures are used extensively to assist the reader in understanding the concepts and then applying them.

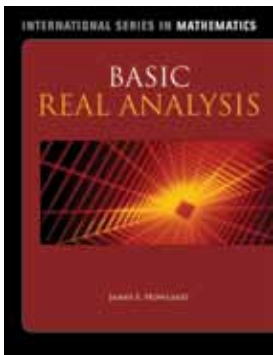
### Key Features

- Includes a new introduction to multivariable calculus with three new sections integrated into the development of the corresponding single variable material.
- Includes a new final chapter on differential equations.
- A wealth of exercises, varying in style and degree of difficulty, are found in each section and ask students to test their understanding of key material.

ISBN-13: 978-0-7637-7492-9

Hardcover • 333 Pages • © 2010

⊕ **Instructor Resources:** SM



## Basic Real Analysis

**James S. Howland**, University of Virginia

Ideal for the one-semester undergraduate course, this text is intended for students who have recently completed a traditional calculus course and proves the basic theorems of Single Variable Calculus in a simple and accessible manner. It gradually builds upon key material as to not overwhelm students beginning the course and becomes more rigorous as they progress. Optional appendices on sets and functions, countable and uncountable sets, and point set topology are included for those instructors who wish to include these topics in their course.

**ISBN-13: 978-0-7637-7318-2 • Hardcover • 232 Pages • © 2010**

**⊕ Instructor Resources: SM**



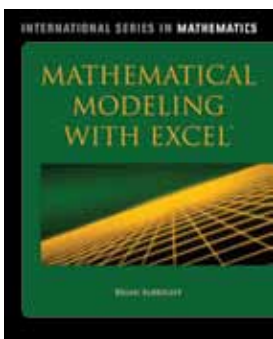
## Mathematical Modeling for the Scientific Method

**David W. Pravica**, East Carolina University

This text is ideal for sophomore or junior-level students that need to be grounded in math modeling for their studies in biology, engineering and/or medicine. It reviews what the scientific method is and how it is important and connected to mathematical modeling. It unites topics in statistics, linear algebra, and calculus and discusses how they are interrelated and utilized.

**ISBN-13: 978-0-7637-7946-7 • Hardcover • 320 Pages • © 2011**

**Available June 2010**



## Mathematical Modeling with Excel

**Brian Albright**, Concordia University

This text presents various methods used to build and analyze mathematical models in a format that students can quickly comprehend. Excel is used as a tool to accomplish this goal of building and analyzing the models. Ideal for math and secondary math education majors, this text presents a wide variety of common types of models, as well as some new types, and presents each in a unique, easy-to-understand format. End-of-chapter exercises ask students to modify or refine the existing model, analyze it further, or adapt it to similar scenarios.

**ISBN-13: 978-0-7637-6566-8 • Hardcover • 286 Pages • © 2010**

**⊕ Instructor Resources: SM**

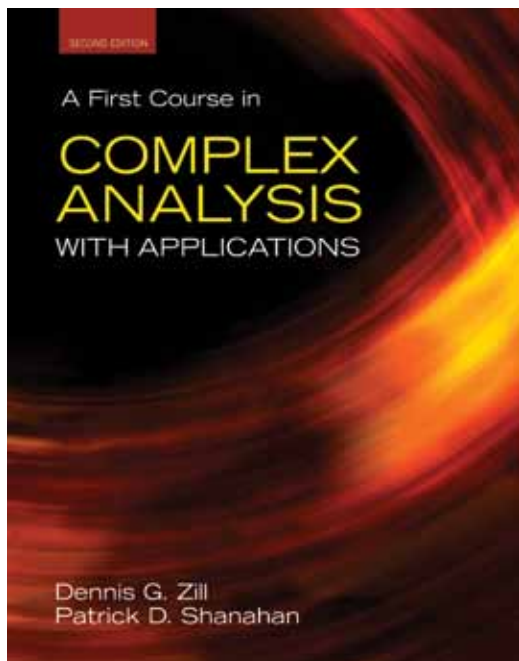
## A First Course in Complex Analysis

### Second Edition

**Dennis G. Zill**, Loyola Marymount University

**Patrick D. Shanahan**, Loyola Marymount University

The new *Second Edition* is a truly accessible introduction to the fundamental principles and applications of complex analysis. Designed for the undergraduate student with a calculus background but no prior experience with complex variables, this text discusses theory of the most relevant mathematical topics in a student-friendly manner. With Zill's clear and straightforward writing style, concepts are introduced through numerous examples and clear illustrations. Students are guided and supported through numerous proofs providing them with a higher level of mathematical insight and maturity.

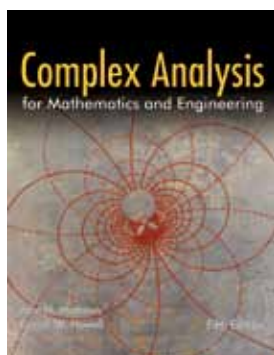


### Key Features

- New and revised problems and exercise sets throughout.
- End-of-chapter materials include Computer Lab Assignments and a Chapter Review Quiz.
- *Remarks* conclude most sections and discuss the relationships and differences between important concepts.
- *Proof Problems* offer an additional learning experience for students, who are supported through each step of the process by hints and guides.

ISBN-13: 978-0-7637-5772-4 • Hardcover • 480 Pages • © 2009

⊕ Instructor Resources: SM ⊕ Student Resources: SR



## Complex Analysis for Mathematics and Engineering

### Fifth Edition

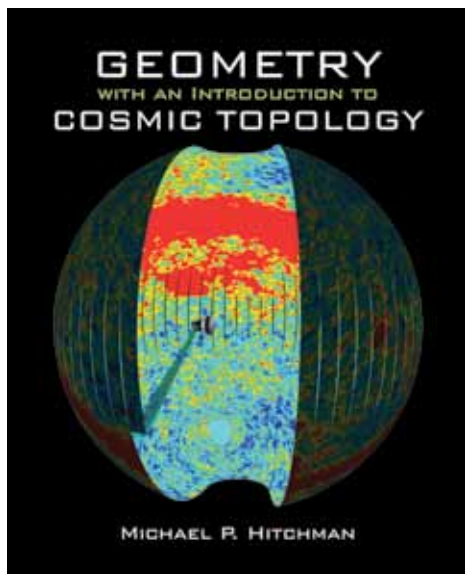
**John H. Mathews**, California State University

**Russell W. Howell**, Westmont College

The fifth edition presents a comprehensive, student-friendly introduction to Complex Analysis. Its clear, concise writing style and numerous applications make the foundations of the subject matter easily accessible for students and proofs are presented at an elementary level that is understood by students with a sophomore calculus background.

ISBN-13: 978-0-7637-3748-1 • Hardcover • 633 Pages • © 2006

⊕ Instructor Resources: SM, PP ⊕ Student Resources: LM



## Geometry with an Introduction to Cosmic Topology

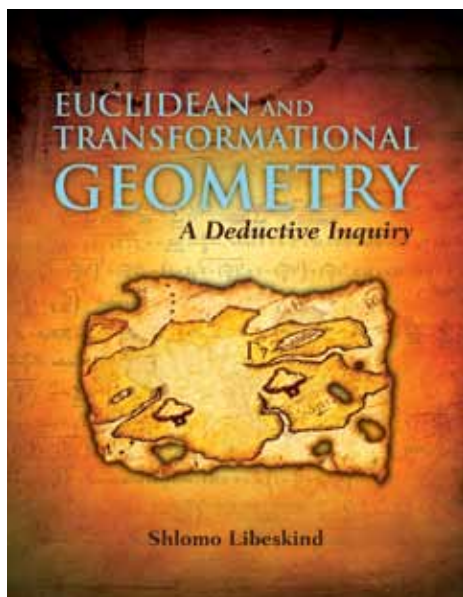
**Michael P. Hitchman**, Linfield College

This text is motivated by questions that have ignited the imagination of stargazers since antiquity. What is the shape of the universe? Does the universe have an edge? Is it infinitely big? Dr. Hitchman aims to clarify this fascinating area of mathematics and focuses on the mathematical tools used to investigate the shape of the universe. The text follows the Erlangen Program, which develops geometry in terms of a space and a group of transformations of that space. This approach to non-Euclidean geometry provides excellent material by which students can learn the more sophisticated modes of thinking necessary in upper-division mathematics courses.

### Table of Contents

1. An Invitation to Geometry.
2. The Plane and Complex Numbers.
3. Transformations.
4. Geometry.
5. Hyperbolic Geometry.
6. Elliptic Geometry.
7. Geometry on Surfaces.
8. Cosmic Topology.

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## Euclidean and Transformational Geometry *A Deductive Inquiry*

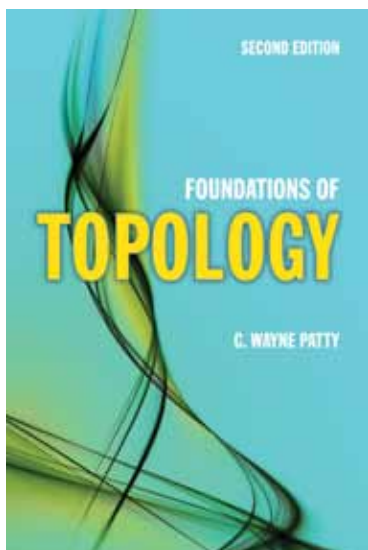
**Shlomo Libeskind**, University of Oregon

Ideal for mathematics majors and prospective secondary school teachers, this text provides a complete and solid presentation of Euclidean geometry with an emphasis on how to solve challenging problems. The author examines various strategies and heuristics for approaching proofs and discusses the process students should follow to determine how to proceed from one step to the next, through numerous problem solving techniques.

### Key Features

- Provides an in-depth exploration of planar Euclidean geometry, with many theorems and problems approached in various ways.
- Includes a large collection of problems at various levels of difficulty.
- The text emphasizes strategies and heuristics of problem solving, discussing how students will know where to begin and how to proceed, which approach is more promising and why, and whether there are different possible solutions to a given problem.

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 Hardcover • 371 Pages • © 2008  
 + Instructor Resources: SM, PP



## Foundations of Topology

*Second Edition*

**C. Wayne Patty**, Virginia Polytech

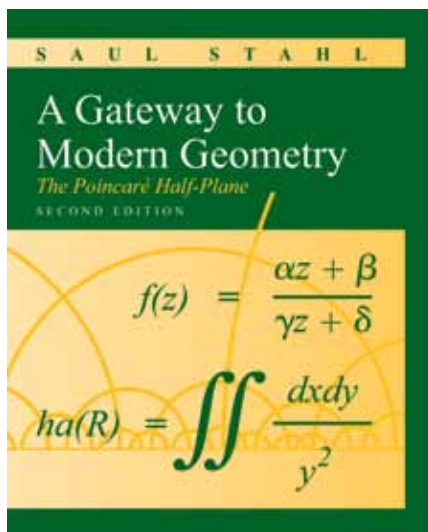
This text provides a user-friendly, clear, and concise introduction to this fascinating area of mathematics. The author introduces topics that are well-motivated with thorough proofs, making them easy to follow. Historical comments are dispersed throughout the text, and exercises, varying in degree of difficulty, are found at the end of each chapter.

### Key Features

- Includes many exercises of varying degrees of difficulty.
- Organized in a flexible fashion allowing instructors to teach topics in the order they desire for their specific course.
- The background in Set Theory needed to work through text is available as an appendix.

**ISBN-13: 978-0-7637-4234-1**

**Hardcover • 380 Pages • © 2009**



## A Gateway to Modern Geometry

*The Poincaré half-Plane*  
*Second Edition*

**Saul Stahl**, University of Kansas

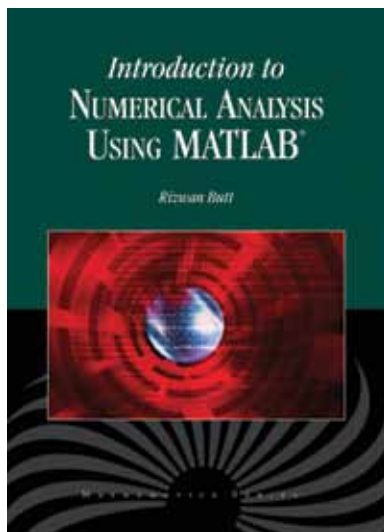
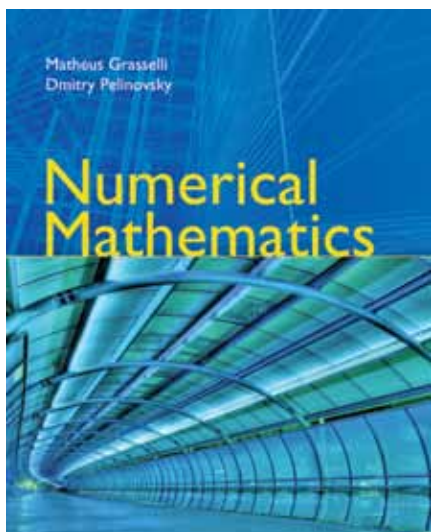
Stahl's *Second Edition* continues to provide students with the elementary and constructive development of modern geometry that brings them closer to current geometric research. At the same time, repeated use is made of high school geometry, algebra, trigonometry, and calculus, thus reinforcing the students' understanding of these disciplines as well as enhancing their perception of mathematics as a unified endeavor. This distinct approach makes these advanced geometry principles accessible to undergraduates and graduates alike.

### Table of Contents

1. Euclidean Geometry.
2. Euclidean Rigid Motions.
3. Inversions.
4. The Hyperbolic Plane.
5. Euclidean Versus Hyperbolic Triangle.
6. The Angles of the Hyperbolic Triangle.
7. Hyperbolic Area.
8. The Trigonometry of the Hyperbolic Triangle.
9. Complex Numbers and Rigid Motions.
10. Absolute Geometry and the Angles of the Triangle.
11. Spherical Trigonometry and Elliptic Geometry.
12. Differential Geometry and Gaussian Curvature.
13. The Cross-Ration and the Unit Disk Model.
14. The Beltrami-Klein Model.
15. A Brief History of Non-Euclidean Geometry.
16. Spheres and Horospheres.

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**Hardcover • 255 Pages • © 2008**



## Numerical Mathematics

**Mathéus Grasselli**, McMaster University  
**Dmitry Pelinovsky**, McMaster University

This text presents the innovative approach of using numerical methods as a practical laboratory for all undergraduate mathematics courses in science and engineering streams. The authors bridge the gap between numerical methods and undergraduate mathematics and emphasize the graphical visualization of mathematical properties, numerical verification of formal statements, and illustrations of the mathematical ideas.

### Key Features

- Numerical examples and inline MATLAB codes provide convenient tools for classroom use.
- Provides a self-contained introduction and overview of undergraduate numerical analysis, including error analysis, computer arithmetic and detailed algorithms for standard numerical techniques.
- Includes discussions on key theoretical concepts in all major areas of undergraduate mathematics for science and engineering (scalar and vector calculus, linear algebra and differential equations) followed by step-by-step numerical implementation of milestone examples.

**ISBN-13: 978-0-7637-3767-2**

**Hardcover • 668 Pages • © 2008**

**⊕ Instructor Resources: PP, SM**

## Introduction to Numerical Analysis using MATLAB

**Rizwan Butt**

Designed for both courses in numerical analysis and as a reference for practicing engineers and scientists, this book presents the theoretical concepts of numerical analysis, and the practical justification of these methods are presented through computer examples with the latest version of MATLAB. The book addresses a variety of questions ranging from the approximation of functions and integrals to the approximate solution of algebraic, transcendental, differential and integral equations, with particular emphasis on the stability, accuracy, efficiency and reliability of numerical algorithms.

### Key Features

- A CD-ROM accompanying the book includes source code, a numerical toolbox, executables, and simulations.
- Provides short programs in MATLAB that can be used for scientific applications with or without modifications.
- Includes an introduction to MATLAB commands.

**ISBN-13: 978-0-7637-7376-2**

**Paperback • 600 Pages • © 2008**

**⊕ Instructor Resources: PP, SM**



## Numerical Methods with VBA Programming

**James W. Hiestand**, University of Tennessee at Chattanooga

This text provides a unique and unified treatment of numerical methods and VBA computer programming, topics that naturally support one another within the study of engineering and science. It incorporates real-world scenarios to motivate technical material, helping students understand and retain difficult and key concepts.

**ISBN-13: 978-0-7637-4964-4 • Paperback • 304 Pages • © 2009**

**+** **Instructor Resources:** SM, PP



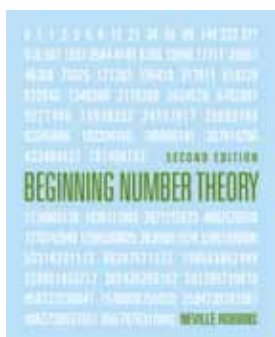
## Closer and Closer Introducing Real Analysis

**Carol S. Schumacher**, Kenyon College

The text takes students on a guided journey through the often challenging world of analysis, providing them with the tools to solve rigorous problems with ease. The author achieves this with a student-friendly writing style, an active learning approach, and rich examples and problem sets, along with a unique two-part format.

**ISBN-13: 978-0-7637-3953-7 • Hardcover • 438 Pages • © 2008**

**+** **Instructor Resources:** IM, SM



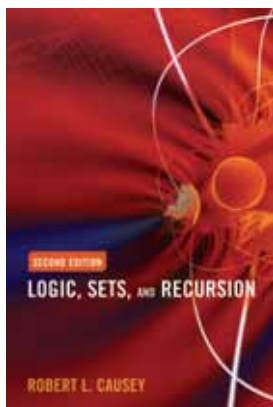
## Beginning Number Theory

**Neville Robbins**, San Francisco State University

The *Second Edition* includes all the major topics covered in a classic Number Theory course and blends in numerous applications and specialized treatments of number theory, including Cryptology, Fibonacci numbers, and Computational Number Theory. It strikes a balance between traditional and algorithmic approaches to elementary number theory and is supported with numerous exercises, applications, and case studies throughout.

**ISBN-13: 978-0-7637-3768-9 • Hardcover • 338 Pages • © 2006**

**+** **Instructor Resources:** SM



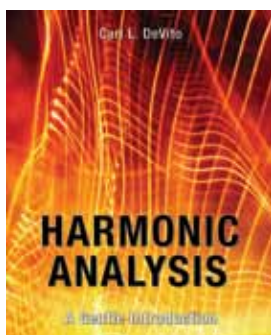
## Logic, Sets, and Recursion

### Second Edition

**Robert L. Causey**, University of Texas, Austin

This text provides a comprehensive introduction to logic, the basic ideas of set theory, and mathematical induction at the undergraduate level. This text paves the way for students preparing to enter more advanced math courses, furnishing them with the experience to construct rigorous proofs with ease.

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## Harmonic Analysis

### A Gentle Introduction

**Carl L. DeVito**, University of Arizona, Tucson

Many branches of mathematics come together in harmonic analysis; each adds richness to the subject and provides insight into this fascinating field. DeVito's *Harmonic Analysis: A Gentle Introduction* presents a clear, comprehensive introduction to Fourier analysis and Harmonic analysis, and provides numerous examples and models, leaving students with a clear understanding of the theory.

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## Computational Science

**Dmitry Kiryanov**  
**Elena Kiryanova**

This applications-oriented book teaches students and engineers how to employ mathematical techniques for simulation and data processing using Mathcad. It is designed as a reference for practicing engineers or for use as a standard university course text, illustrating practical examples from computational science (including optics, environmental science, chemistry, biology, tomography, economics, etc).

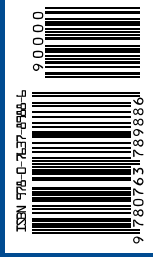
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